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"The ORION" is an entrenched publication in the realm of medical journal that has been persistently bestowing the doctors' community in Bangladesh with a specialty, "avowing local doctors" internationally with their research works since 1998. The ORION, with its 26th volume is crossing the boundary of relentless eight years of success and this immeasurable achievement compliments all the readers and physicians who are attached at every moment. This accomplishment will assure the editors and the respective members of "The Advisory & The Review Board" to expedite advancement of "The ORION". This 26th volume covers a wide array of review articles, original articles and three case reports.

The editorial of this volume "Home based neonatal care" (P-418) converges on the etiology of neonatal mortality, the importance of home based neonatal care with danger signs and checklist for newborn care that must be looked at after birth.

The first review article "Indapamide sustained release: Effective first step antihypertensive therapy" discusses on epidemiology, risk & importance of reducing hypertension & refers studies on the latest version of thiazides- Indapamide, its superiority over other thiazides as the first step antihypertensive (P-419). Followed by "Management of febrile convulsion: An update" focuses on its criteria, mechanism, complication includes criteria for admission, detailed management, counseling of parents in this regard (P-422). Another article, "Radio-cephalic fistula for hemodialysis: Vascular surgical consideration" (P-425) justifies the role of arteriovenous fistula over previously used repeated phlebotomy procedure for hemodialysis, its operative procedure, evaluation, complications.

Review article on "Fatty liver: A risk factor for chronic liver disease and new strategy for its management" compares between non alcoholic fatty liver disease with non alcoholic steatohepatitis, their epidemiology with patho-physiology, management, on-going clinical trials for lifestyle modifications & pharmaceutical agents to treat more effectively (P-427). Followed by "Cerebral palsy" nicely describes the classes of cerebral palsy, complications & importance of early detection with multidisciplinary approach of management (P-431). The concluding article "Cystic lesion of the jaw: An overview" sketching the various cysts of jaws, their prevalence, mechanism of cyst formation, clinical features with its management method (P-434).

Original article "Prevalence of coronary heart disease among the rural people with risk factor analysis" is a study conducted in a Rural Community Heart Care Centre unfolding the prevalence of CHD along with underlying causes, risk factors (P-436). Other original article "Bilateral dacryocystectomy in one sitting is convenient then in two sitting: A retrospective study" is literally a report on 27 patients of whom dacryocystectomy was performed & advantage of performing it in one sitting rather than in two (P-438).

The case report "Transfusion associated GVHD" confers the various aspects of GVHD in a patient with AML (P-440). Other case report "Seborrheic keratosis" is on a 72 years old male patient discusses the histopathology and various aspects of the disease (P-441). Lastly "Leech in the peritoneal cavity: An unusual cause of intestinal obstruction" focuses on a 3 years old girl with a leech in her abdomen, operative history, fate and discussion on leeches thereafter (P-443).

For further development of the ORION, opinions and suggestions are highly encouraged. The ORION medical journal makes articles freely available on www.orion-group.net/journal for the advancement of public health & medical research. For reproducing multiple copies of any of "The ORION" articles, please e-mail: journal@orion-group.net & mention the article title, author's name, volume and page number, year of publication and mostly the purpose for reproducing.

May the almighty bless all in the spirit of good health.

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Home Based Neonatal Care

Chowdhury MAK¹

The ORION 2007 ; 26: 418

Globally about 5 million deaths take place during the neonatal period and 98% of them occur in the developing countries¹. In Bangladesh neonatal mortality (the number of deaths of infants under 28 days of age per 1,000 live births) accounts for about two-thirds of infant deaths and about one-half of deaths among children under 5 years age. The neonatal mortality rate declined in the early 1990s, but remained at 41-42/1000 live births between 1995-1999 and 1999-2003^{2,3}. The decline rate has become somewhat static since that time. The reason for rapid decline during the late eighties was the reduction in deaths due to neonatal tetanus (which was as high as 39 per 1000 live births⁴)

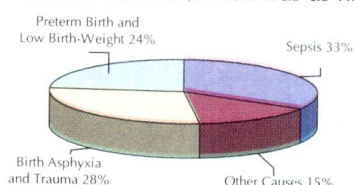


Figure 1: Health situation in the South-East Asian Region 1998-2000, WHO.

by successful maternal immunization with tetanus toxoid. Neonatal tetanus is presently almost nil from this intervention. At present the main causes of neonatal deaths are birth complications (asphyxia), infections (sepsis) and

prematurity/low birth weight (L.B.W.) [Fig. 1].

Recent community-based study has shown that the main risk factors for neonatal deaths are complications during delivery, prematurity, care for a sick neonate from an unlicensed "traditional healer" or care not sought at all⁵. Reducing neonatal mortality to about one-third of the present level is needed to achieve the United Nations Millennium Development Goals⁶. To achieve this goal we need to address these principal causes of the neonatal morbidity and mortality.

Among the principal causes, reduction of prematurity and low birth weight is a long, complicated task involving improvement of maternal health, nutrition, education etc. But the other two causes- perinatal asphyxia and sepsis can be reduced by short-term strategy. Most of these deaths are preventable which has been proved by many developing countries like Sri Lanka where neonatal mortality rate is less than 15/1000 live births.

As about 90% of our deliveries take place at home and most of the neonatal deaths take place there in the community, we must take measures for appropriate care of the newborns at home. Home-based neonatal care in a remote community of India has proved to be very successful (Table-1)⁷.

Mortality due to sepsis reduced	76%
Case fatality from sepsis decreased from	18.5% to 2.8%
Perinatal mortality reduced	71%
Neonatal mortality reduced	62%

Table 1: Community health workers were trained to provide health education to pregnant women, diagnose and manage birth asphyxia, identify premature and LBW (i.e., high risk) infants, provide thermal control, encourage breast feeding, administer vitamin K, treat skin infections, identify sick newborns and administer antibiotics to neonates with suspected sepsis.

In a recent study (unpublished) at the out-patient dept. of Dhaka Shishu Hospital, we have observed that neonates brought to

hospital within one week of birth are mainly serious-70% requiring hospitalization, 15% of whom expired in the hospital. But the babies who become sick after one week of birth were less serious, 8% requiring admission and no mortality in the admitted group. Ninety two percent (92%) received OPD treatment, 69% of whom given only Home-care advice without medicine. Three percent (3%) of these babies were brought later for OPD treatment and 1% needed admission.

The various study findings indicate the need for identification of babies at high risk for death, community and home-based interventions and improved referral facilities.

Improving knowledge among mothers about care of a L. B. W. baby, recognizing danger signs, seeking prompt care for a sick baby from a qualified doctor/health facility would contribute to significant reduction of these avoidable deaths.

Checklist for newborn care essential steps (WHO):

- ❖ Clean and safe delivery
- ❖ Warmth (baby and mother)
- ❖ Immunization (BCG, OPV, Hep-B).
- ❖ Breast feeding (promoting early and exclusive breast feeding without pre-lacteal feeds).
- ❖ Recognition of illness and prompt management or referral.
- ❖ Neonatal resuscitation
- ❖ Cord, eye and skin care.

The following danger signs can be looked for by parents/care-givers:

- ❖ Poor sucking (Very important).
- ❖ Poor activity, not arousable.
- ❖ Yellowish palms/soles.
- ❖ Umbilical discharge.
- ❖ Small baby (Weight < 1500gm).
- ❖ Rapid breathing (>60/min), Chest retractions
- ❖ Stoppage of breathing (apnea) or labored breathing
- ❖ Abnormal eye/limb movements (Convulsions)
- ❖ Diarrhea/vomiting/abdominal distension
- ❖ Cold / hot to touch.
- ❖ Bluish lips /tongue
- ❖ Bleeding
- ❖ Multiple skin pustules.
- ❖ Jaundice on day one.

As about 50% of our babies are born L.B.W. by international definition (<2.5 Kg.),⁸ majority of them do not need special care but those below 2.0 Kg. will require advice about feeding (like giving some spoon feeding along with suckling from the breast) & keeping them warm. Above all, keeping a very close eye on the danger signs and seeking urgent care from an appropriate person/center will reduce many of our newborn deaths.

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Indapamide sustained release : Effective first step antihypertensive therapy

Patwary MSR¹

The ORION 2007 ; 26: 419-421

Introduction

Hypertension is a worldwide epidemic, one billion hypertensive in the world and three million die annually as a direct result of hypertension. Hypertension is recognized worldwide as a major CV risk factor. JNC-VII Guidelines, 2003 for management of hypertension recommended, thiazide diuretics are the preferred initial therapy for hypertension¹. Indapamide is an anti-hypertensive diuretic related to the thiazides. Indapamide SR is very well tolerated with unimpaired metabolic profiles, innovative SR formulation and optimal efficacy-acceptability ratio. It is a new reference antihypertensive diuretic with complete 24-hours blood pressure controlling effect. It regresses LVH, reduces microalbuminuria in type-2 diabetic hypertensives. Indapamide can be used in all hypertensives patients. It is the drug of choice for elderly hypertensive.

Key Words

Indapamide SR, Diuretics, Antihypertensive.

Hypertension

Hypertension is recognized worldwide as a major CV risk factor. Cardiovascular diseases accounts for 30% of the world's deaths. Lowering of blood pressure causes average percent reduction of stroke incidence by 35-40%, myocardial infarction by 20-25% and heart failure by 50%.

Target blood pressure in patient with hypertension without diabetes mellitus or renal failure is <140/90 mm of Hg. Goal pressure in patient with hypertension with diabetes mellitus or renal failure or coronary artery disease is <130/80 mm of Hg. In patient with isolated systolic hypertension blood pressure goal is <140 mm of Hg. Hypertensive patients are at risk of cerebro-vascular disease, coronary heart diseases, heart failure, renal insufficiency, peripheral vascular diseases and premature death.

So goal of prevention and management of hypertension are to reduce morbidity and mortality, maintain systolic blood pressure below 140 mmHg and diastolic blood pressure below 90 mmHg, control other modifiable risk factors, prevent stroke, preserve renal function and prevent or slow heart failure progression.

Sometimes hypertensive patient cannot reach to goal BP in spite of adequate drug therapy (at least 3 drugs in optimum dosages) is the condition of refractory hypertension. Causes of refractory hypertension are unsuspected secondary cause, poor adherence to therapeutic plan, continued intake of drugs that raise blood pressure (e.g., NSAIDs), failure to modify lifestyle including weight gain, heavy alcohol intake and volume overload due to inadequate diuretic therapy, progressive renal failure, high sodium intake.

Some condition require immediate blood pressure reduction like hypertensive encephalopathy, acute LVF, acute aortic dissection, post CABG, eclampsia. If patient had hypertensive intracerebral bleeding, acute subarachnoid haemorrhage, unstable angina or acute MI require immediate BP reduction only when it is excessively high.

JNC-VII Guidelines, 2003 for management of hypertension recommends aggressive treatment, simplified classification system also recommends thiazide diuretics are the preferred initial therapy for hypertension¹.

For persons over age 50, SBP is more important than DBP as a CVD risk factor. Starting at 115/75 mmHg, CVD risk doubles with each increment of 20/10 mmHg throughout the BP range¹.

Persons who are normotensive at age 55 have a 90% lifetime risk for developing HTN. Those with SBP 120-139 mmHg or DBP 80-89 mmHg should be considered prehypertensive who require health-promoting lifestyle modifications to prevent CVD. Thiazide-type diuretics should be initial drug therapy for most, either alone or combined with other drug classes. Certain high-risk conditions are compelling indications for other drug classes. Most patients will require two or more antihypertensive drugs to achieve goal BP. If BP is >20/10 mmHg above goal, initiate therapy with two agents, one usually should be a thiazide-type diuretic¹.

The prevalence of isolated systolic hypertension is near 10% and increases with age². Furthermore, most elderly hypertensive patients have primarily systolic hypertension with only minor elevations of diastolic blood pressure. Reports from the Framingham Study have emphasized that systolic hypertension is a greater risk for causing cardiovascular events than diastolic hypertension³, and the combination of high systolic and low diastolic pressure (widened pulse pressure) is a major predictor of cardiovascular disease. The widened pulse pressure reflects atherosclerotic thickening of the major capacitance vessels. In the Framingham Study for individuals aged 55 to 65 years the lifetime probability of developing hypertension is nearly 90%⁴. In a meta-analysis of treatment of isolated systolic hypertension in the elderly, Staessen et al⁵ reported that active treatment of hypertension reduced cardiovascular mortality by 18%, all cardiovascular complications by 26%, stroke by 30% and all coronary events by 23%. Absolute benefit was greater in men than women.

Despite the enormous evidence indicating the benefits of treatment, only a small percentage of patients are adequately controlled. Hypertension is poorly controlled, with less than 25% controlled in developed countries and less than 10% in developing countries¹. The reasons are multiple: lack of knowledge by health professionals of the importance of treating systolic hypertension, drug side effects and medication expense, to mention a few.

Lifestyle modification, such as weight reduction, low sodium diet, reduced alcohol intake, cessation of smoking and

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increased physical activity should be an adjunct to all drug therapy. The blood pressure level, cardiovascular risk factors, and target-organ damage should be evaluated in planning antihypertensive treatment^{1,6,7}.

Thiazide diuretics in hypertension

Thiazide-type diuretics are useful in slowing demineralization in osteoporosis. Thiazide-type diuretics have been the basis of antihypertensive therapy in most outcome trials. Diuretics enhance the anti-hypertensive efficacy of multidrug regimens, can be useful in achieving BP control and are more affordable than other antihypertensive agents. Thiazide and Thiazide-type diuretics in recent guidelines, JNC-VII; 2003 recommended "Thiazide-type diuretics should be used as initial therapy in most patients with hypertension, either alone or in combination with one of the other classes (ACEIs, ARBs-blockers, CCBs)"¹¹.

Several reports have recommended low-dose diuretics as an effective, relatively cheap medication with few side effects. The recent JNC-VII guidelines in hypertension recommend diuretics as first-step therapy for most hypertensive patients, including those at-risk such as elderly hypertensives, hypertensives with recurrent stroke, high coronary disease risk, heart failure or type 2 diabetes¹. Diuretics are also recommended as the second-choice drug when other first choice drugs fail to control the hypertension. For example, in the Life Trial Study, a diuretic was added as a second line therapy in all patients who did not attain target blood pressure with primary drug, losartan or atenolol. At the 12-month visit over 60% of patients were on a diuretic⁸. Also, in the AASK Study, a diuretic was the second-choice drug⁹.

These recommendations were based upon a number of long-term clinical trials that demonstrated the beneficial effects of diuretics in preventing cardiovascular complications in hypertension patients, especially in preventing strokes and heart failure.

In the SHEP Study (Systolic Hypertension in the Elderly Study) reported in 1991, there was a 33% decrease in stroke and 55% decrease in heart failure over 5 years¹⁰. The main drug used was a thiazide diuretic. In several trials using diuretics, all cardiovascular disease was reduced by 32% SHEP, 40% STOP 1, 17% MRC and 31% in the Syst-Eur Study using CCB¹¹. When compared with other drugs in a given trial, diuretics were never found to be inferior in preventing CV events.

In 1998, Moser¹² pointed out the steady decline in the use of diuretics in the USA despite the clinical evidence supporting their use. The reasons include concern over metabolic effects, such as increased cholesterol and blood glucose and hypokalemia and heavy promotion of newer drugs. The data, however, indicated that with low doses the metabolic effects are minor and do not lessen the beneficial effects of diuretics. Recently, the role of diuretics in treating hypertension received a major boost with the publication of the ALLHAT Trial (The Antihypertensive and Lipid Lowering Treatment to Prevent Heart Attack Trial)^{13,14}. The ALLHAT is one of the most important antihypertensive trials. ALLHAT compared three different classes of medications: lisinopril (representing ACE inhibitors), amlodipine (representing dihydro-pyridine calcium channel blockers: DHP-CCB) and doxazosin (representing α -blockers) with Chlorthalidone (representing standard thiazide treatment). The planned follow-up was long (4 to 8 years).

The rest of the study ended in 2002. Each drug reduced blood pressure substantially, but the blood pressure decrease and drug tolerance with the thiazide diuretic was better than with the ACE inhibitor.

The major finding of ALLHAT was that all three medications were equally effective in preventing the primary outcome event, namely coronary heart disease, death and non fatal myocardial infarction. However, for some secondary outcomes there were differences. The thiazide diuretic was better than the calcium channel blocker in preventing heart failure. Surprisingly, the thiazide diuretic was superior to the ACE inhibitor in preventing stroke, especially in black patients and in combined cardiovascular disease and possibly heart failure.

Despite the mild adverse metabolic effects in some patients, such as hypokalemia, hypercholesterolemia and increase in blood glucose, there were no excess cardiovascular events in the whole study population or in the subgroup of diabetic patients. The ALLHAT report recommended that diuretics should be preferred for first choice antihypertensive therapy, especially in those patients with high risk cardiovascular disease.

Indapamide, a thiazide-type diuretics

Indapamide is indoline derivatives of chlorosulphonamide. It differs chemically from thiazides and contains only one sulphonamide group and no thiazide ring.

Mode of action

Indapamide is an anti-hypertensive diuretic related to the thiazides. The anti-hypertensive effect is associated with an improvement in arterial compliance and a reduction in total and arteriolar peripheral resistance. The mechanism of vascular action of Indapamide appears to involve: stimulation of renal synthesis of prostaglandin PGE₂, with its vasodilator hypotensive actions and increase in synthesis of prostacyclin PGI₂ with its vasodilator and anti-platelet actions in the endothelium.

Indapamide as a first step antihypertensive, has two properties beyond diuresis. First, there is added vasodilation¹⁵. A second unusual property is a high concentration class I and III antiarrhythmic effect¹⁶. If this were also clinically relevant, it could protect from ventricular arrhythmias, while also carrying a theoretical risk of torsades de pointes in the presence of hypokalemia or cotherapy with certain other antiarrhythmics. Indapamide has a terminal half-life of 14 to 16 hours and effectively lowers the blood pressure over 24 hours. The initial dose is 1.25 mg once daily for 4 weeks, then if needed 2.5 mg daily. Indapamide appears to be more lipid neutral than other thiazides¹⁷ but seems equally likely to cause other metabolic problems such as hypokalemia, hyperglycemia or hyperuricemia. With a reduced but still antihypertensive dose of only 0.625 to 1.25 mg combined with the ACE inhibitor perindopril 2-4 mg, the serum potassium fell by only 0.11 mmol/L over 1 year, while the blood glucose was unchanged from placebo¹⁸. Regarding regression of LV hypertrophy, indapamide was better than enalapril in the LIVE study (LVH with Indapamide Versus Enalapril)¹⁹. In cardiac edema, higher doses such as 2.5 to 5 mg give a diuresis. However, the drug has little advantage over other well-tried diuretics, although approved for this purpose. There are no strict comparisons with low-dose thiazides concerning effects on glucose tolerance. In general, its side effect profile resembles that of the thiazides,

including the low risk of sulfonamide sensitivity reactions. In Europe, a new sustained-release preparation (1.5 mg) gives blood pressure reduction equal to that of 2.5 mg indapamide, yet the incidence of hypokalemia $<3.4\text{mmol/L}$ is more than 50% lower²⁰.

A smooth pharmacokinetic profile of Indapamide SR 1.5 mg than Indapamide IR 2.5 mg, elimination of unnecessary peaks of plasma concentration. Also full antihypertensive efficacy found at lower dose of Indapamide SR 1.5 mg.

Systolic blood pressure increases risk of MI, HF and stroke than diastolic blood pressure. Indapamide SR is the best choice for superior and sustained reduction of systolic blood pressure comparable to amlodipine and ARB.

The LIVE study²¹, European multicenter prospective, double-blind, randomized clinical trial indapamide SR versus enalapril 20 mg/day for 12-month duration, in 577 hypertensives with echo-proven LVH, shows significant reduction of LVH with indapamide SR.

NESTOR study²² Natrilix SR vs Enalapril Study in Type 2 diabetic hypertensives with microalbuminuria, international multicenter study, randomized, double-blind, controlled study, Indapamide SR versus enalapril 10 mg/day, 1-year duration, 570 type 2 diabetic hypertensives with microalbuminuria. Indapamide SR significantly reduces microalbuminuria in type 2 diabetic hypertensives. Indapamide SR is as effective as enalapril in reducing microalbuminuria with equivalent MBP control.

Indapamide SR is very well tolerated with unimpaired metabolic profiles, innovative SR formulation, optimal efficacy-acceptability ratio, new reference antihypertensive diuretic, complete 24-hours blood pressure control, metabolic neutrality, regression of LVH²³, reduction of microalbuminuria in type 2 diabetic hypertensives, used in all hypertensive patients.

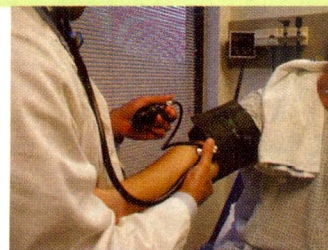
Conclusion

JNC-VII guidelines in hypertension, strongly recommend diuretics as first-step therapy for most hypertensive patients. Diuretics have been virtually unsurpassed in preventing the cardiovascular complications of hypertension. If not chosen first-line, diuretics as ideal second-step antihypertensive therapy.

In conclusion indapamide has powerful antihypertensive efficacy, protecting from cardiovascular events, well tolerated and drug of choice for elderly hypertensive, used in all hypertensive patients.

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Management of febrile convulsion : An update

Khan MAS¹, Murad MAU², Rahman AKMS³, Hossain MM⁴

The ORION 2007 ; 26: 422-424

Introduction

Febrile convulsion is a common paediatric presentation in world wide including our country particularly in the child age group from 6 months to 5 years. In our country there is no definite data regarding incidence of febrile convulsion, though the magnitude of the problem is supposed to be definitely significant. In USA, the incidence is 3-4%¹. The peak incidence is at 18 months². In western and European country, about 4% of the febrile convulsion occur in the first 6 month of life, 90% between 6 month and 3 years of age^{2,4}. Prevalence in boys is slightly higher than girls⁵. In Europe and USA, there are update guide lines from 'Royal college of Physicians and British Paediatric Association, American Academy of Pediatrics' on regular basis published at regular interval regarding management of febrile convulsion in children. In our country that is yet to come. Physician should themselves acquire this updated knowledge regarding the management of febrile convulsion in children.

Definition

A febrile convulsion is a seizure occurring in a child age 6 months to 5 years, associated with fever arising from infections or inflammation outside central nervous system in a child who is otherwise neurologically normal⁶.

Types of febrile convulsion

1. Simple febrile convulsion : Most febrile seizure are isolated, generalized, tonic-clonic seizures lasting less than 15 minutes as it is not repeated during the same illness⁵.
2. Complex febrile convulsion : Last about 15-30 minutes or are focal or recur during the febrile illness or are not followed by full consciousness within an hour.

Mechanism of febrile convulsion

The mechanism causing febrile convulsion are not known. It may not be the fever that causes the seizures, but release of cytokines, is a consequence of infection that (a) cause fever and (b) cause seizures. The risk of febrile convulsion depends upon the age of the child, so reflecting maturational sensitivity to the cytokines with respect to seizure induction. Consequently much of the debate over the presence, height or rate of rise of fever may be irrelevant⁷.

Causes of febrile convulsion

A comprehensive review of the literature identified the

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conditions usually associated with febrile convulsion. 3 genetic factors are important in the etiology of febrile seizures⁸. All infection which causes fever, may be associated with febrile convulsion, but some infections are more prominent. Roseola infantum and shigella dysentery are said to be associated with particularly high risk of febrile seizures⁵. In decreasing order of frequency they are-

- ❖ Viral infections
- ❖ Otitis media
- ❖ Tonsillitis
- ❖ Urinary tract infection
- ❖ Gastroenteritis
- ❖ Lower respiratory tract infection
- ❖ Post immunization.

Criteria of febrile seizures

- ❖ Age- 6 months to 5 years old.
- ❖ Convulsion-
 - Duration : usually no longer than 3-6 minutes; class as complex if prolonged more than 10-15 minutes.
 - Pattern : usually generalized tonic-clonic; class as complex if focal.
 - Recovery of level of consciousness : usually complete within an hour; class as complex if not fully recovered within an hour.
- ❖ Temperature - Fever around the time of the convulsion.
- ❖ History of previous febrile convulsion- class as complex if convulsion recur in the same febrile illness.
- ❖ Recent immunization- It is rare for a febrile convulsion to precipitated by an immunization.
- ❖ EEG - Electroencephalogram (EEG) done within a week after a febrile convulsion may be abnormal but after a week it usually shows no abnormality⁹.

Investigation

Investigations should be directed towards identifying the source of the fever.

- ❖ UTI - When no focus of infection is found and admission is not planned take a urine sample for microscopy and culture.
- ❖ Blood tests, electroencephalograms (EEGs) and neuroimaging are not required in the evaluation of simple febrile convulsions^{7,10}.

Criteria for admission

1. Most children with a first febrile convulsion do not need to be admitted:- The main concern is the possibility of missing a more serious diagnosis such as meningitis.
2. Strongly consider admission for observation, lumbar puncture or treatment if any of the following factors are present:-
 - ❖ Age under 18 months (May have meningitis without meningeal signs).
 - ❖ Signs of meningitis (neck stiffness, photophobia, kernig's sign, brudzinski's signs, bulging

fontanelle, depressed level of consciousness).

- ❖ Child was drowsy before the seizure or is irritable, systemically unwell or "toxic".
- ❖ Petechial rash
- ❖ Recent or current treatment with antibiotics (because partially treated meningitis may not have meningeal signs).
- ❖ Complex convulsion (i.e. lasting longer than 10 minute, or with focal features, e.g. jerking affecting only one limb or repeated in the same episode of illness or with incomplete recovery within 1 hour).
- ❖ Early review by a doctor not possible.
- ❖ Inadequate home circumstances.
- ❖ Career anxious or unable to cope.
- ❖ The cause of the fever requires hospital management in its own right^{2,7,11-13}.

Management

A full clinical assessment about type of seizure, its etiology, precipitating factors and concomitant illness should be done and accordingly management is planned. Aim of the treatment is to control seizure to improve quality of life and to prevent complications.

a. Management of the fitting febrile child

- ❖ Clothing should be removed and the child covered with a sheet.
- ❖ The child should be on its side or prone with its head to on side since vomiting with aspiration is a hazard.
- ❖ Rectal diazepam is the drug of choice, producing on effective blood concentration of anticonvulsant within ten minutes. Dose: 0.5 mg/kg state.
- ❖ Repeat same dose if convulsion is not controlled within half an hour¹⁴.
- ❖ It can be repeated after 30 minutes if convulsion is not controlled. Paracetamol 12-15 mg/kg/dose 4-6 hourly.
- ❖ Avoid physical methods such as fanning, cold bathing and tepid sponging-their use in controversial as they are felt to cause some discomfort and minimal benefit^{15,16}.

b. Measurement to consider to prevent febrile convulsion

- ❖ Treating fevers with antipyretics does not prevent febrile convulsion⁶.
- ❖ Oral diazepam is recommended as an effective and safe method of reducing the risk of recurrence of febrile seizure. At the onset of each febrile illness, diazepam 0.3 mg/kg/dose-8 hourly is administered for the duration of illness (usually 2-3 days)¹.
- ❖ Diazepam (oral and rectal) at relatively high doses may prevent febrile convulsion in subsequent illness if given at the onset of a febrile episode¹⁷.
- ❖ Rectal diazepam is safe for home use, providing parents are properly educated in its use^{11,18}.
- ❖ Adverse effects have been reported with intermittent use of diazepam; these included ataxia (31.1%), lethargy (28.8%) and irritability (24.4%), but lasted no more than 36 hours¹⁹. Continuous prophylaxis is controversial. No treatment is available to reduce the rare risk of subsequent epilepsy. There is evidence to suggest that immunizations do not increase the risk of recurrent febrile convulsion⁶.

Complication

Long term adverse effects are rare.

There is no evidence of subsequent impaired intelligence or poorer academic achievement²⁰. The risk of subsequent epilepsy is rare but increase with each of the following risk factors.

- ❖ Neurological abnormalities or development delay before the onset of febrile convulsion.
- ❖ Atypical seizure.
- ❖ Family history of epilepsy.
- ❖ Complex convulsion.

In the absence of these risk factors only 1% of children go on to develop epilepsy (compared with 0.4% if children without a history of febrile convulsion)^{18,21}.

Febrile convulsion after measles, mumps, rabella (MMR) immunization were not at increased risk of later epilepsy (0.23% compared with 0.60%; not statistically significantly different)²².

Prognosis

- ❖ Febrile convulsion recur in subsequent febrile illness in about 30% of children. Only 9% have more than three seizures⁴.
- ❖ Recurrence is most common within a year of the first febrile convulsion (70%)²³.

Recurrence is more likely if:

- ❖ The first febrile convulsion occurs under the age of 15 months.
- ❖ The first convulsion is complex.
- ❖ There is a family history of febrile convulsion or epilepsy in a first degree relative.
- ❖ The child attends day nursery (due to increased frequency of febrile illnesses).
- ❖ The recurrence rate is 10% in the absence of these risk factors; 25% with one risk factor; 50% with two risk factors and approaches 100% with three or more risk factors^{7,18}.

Counseling of the parents

Although febrile convulsions are frightening to watch, they are not harmful to the child, do not cause brain damage and will not cause the child to die.

- ❖ The child will be sleepy for up to an hour after the convulsion.
- ❖ Febrile convulsions are not the same as epilepsy.
- ❖ Epilepsy can develop later, but this is rare- the chance is about 1 in 100 for children who have had two or more febrile convulsions.
- ❖ Febrile convulsion may recur - about 1 in 3 children will have another febrile convulsion.
- ❖ Immunization is still advised after a febrile convulsion, even if, as rarely happens, the febrile convulsion followed an immunization^{2, 7, 13, 24}.

Conclusion

It is concluded that management of febrile convulsion is very important aspect to make an accurate diagnosis of febrile convulsion and to reassure and inform parents about the benign nature of it. It is also essential to inform parents about the immediate home treatment to reduce possible future febrile convulsion.

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Radio-cephalic fistula for hemodialysis : Vascular surgical consideration

Bhuiyan MBG¹, Ahsan NAK², Shirin M³

The ORION 2007 ; 26: 425-426

Introduction

Vascular access may be defined as any technique that allows removal from & delivery of fluids into the circulatory system at a rate of 200 ml/min or more for lengthy interval.

In 1966 Brescia et al¹ reported their experience with the radiocephalic arteriovenous fistula constructed at the wrist. This procedure ensured the cephalic vein would be kept distended even though blood was continuously & rapidly withdrawn from the vein. The blood was then passed through the dialyser and returned to the proximal segment of same arterialized vein or to another vein. The advantage of the Brescia-Cimino fistula were the absence of perpetual defects in the skin through which infection could more easily enter and the absence of implanted prosthetic materials. The disadvantage was its common need for time to mature before use and therefore its unsuitability for emergency use.

Justifications

There are many choices of devices as technique for achieving permanent internal vascular access. The simplest one that offers reasonable success should be used².

To select the best location for construction of an arteriovenous fistula for vascular access, the surgeon must be sure that the vein to be used is adequate to promote success of the fistula and that the arterial supply remaining as adequate to ensure satisfactory perfusion of the limb. Often patients who need vascular access have had a chronic illness and have required repeated phlebotomy and intravenous infusions which may have caused thrombosis of many superficial veins. The venous lumen must be patent at the anastomosis and proximally. Careful clinical examination & Duplex scanning can evaluate it. If necessary phlebography can be used to determine the anatomy and examine the suspected area of stenosis.

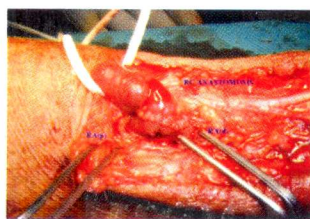


Figure: Radio-cephalic fistula

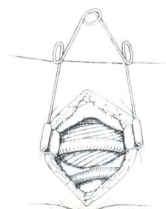
To ensure adequate arterial supply to the limb after construction of a fistula the surgeon must make sure that the followings are fulfilled:

- ❖ An alternative arterial supply is available, i.e. in the upper extremity the Allen test should be negative.
- ❖ The artery is not interrupted i.e. a side to side anastomosis is constructed.

- ❖ The anastomosis should be made as peripheral as possible or if a more central location between larger vessels such as the brachial artery & cephalic vein is required. The anastomosis should be made small enough to avoid a steal syndrome.

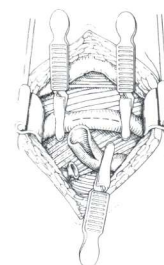
Operative procedure

Incision: A transverse incision is made and proximal & distal skin flaps are developed to allow exposure of adequate lengths of the vessels.

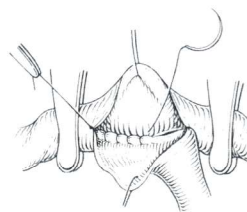
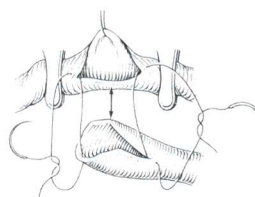


Exposure: To expose the artery the deep fascia is incised longitudinally along the palpable radial pulse. Branches are tied with silk or cauterised and divided so that artery can be lifted from its bed.

Isolation of vessels: The vein is tied distally, controlled proximally with a vascular clamp and divided just proximal to the ligature. The isolated segment is dilated gently with a clamp and irrigated with heparinised saline.



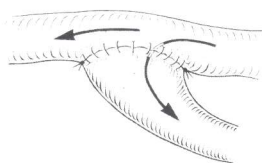
Arteriotomy: The artery is controlled with vascular clamps applied perpendicularly and is rotated medially to present the lateral aspect of the vessel for anastomosis. A longitudinal arteriotomy 2-3 times width of the lumen is made and flushed free of blood or clot with heparinised saline.



Anastomosis: The cephalic vein end is spatulated to fit the arteriotomy. The anastomosis is constructed with two running 6/0 or 7/0 monofilament polypropylene (prolene) sutures inserted at the proximal and distal vertices with the help of lateral & medial stay suture. Posterior anastomosis is constructed through the open anastomosis with the knots tied outside the vein should describe a gentle curve as it passes from the anastomosis to its native bed and should not be kinked or twisted.

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Evaluation: When the vascular clamps are removed the vein is checked for filling and for a palpable thrill. Haemostasis is ascertained.



Wound closure: The wound is closed with a single row of continuous vertical mattress suture of 4/0 nylon or prolene. A loose dressing which is not circumferential is applied to the incision. The patient is advised to make ordinary use of the extremity, to avoid placing it in a dependent position and not to modify the dressing. In men with large vein this sort of fistula can be used for dialysis in 1-2 weeks. In women and children who tend to have small vessels, a period of maturation of several weeks or months may be desirable before every use without risk of loss of the fistula.

Complication

Complications of vascular access for hemodialysis⁴ -

- ❖ Infection
- ❖ Thrombosis
- ❖ Hemodynamic complication
- ❖ Intimal hyperplasia
- ❖ Aneurysm formation

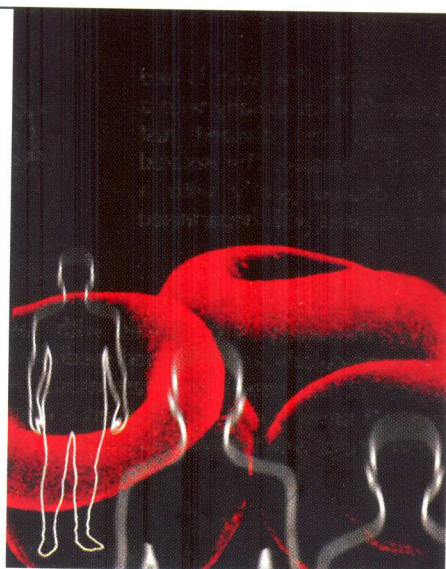
Discussion

Hemodialysis has transformed the management of chronic renal insufficiency enormously. Patients who were once considered to die from renal failure are now routinely maintained on hemodialysis with quite reasonable lives. The population of dialysis patients is increasing at a rate of 10% per year³. Dialysis access is now the most common vascular operation routinely done by vascular surgeons.

The subcutaneous autogenous fistula also called Brescia-Cimino fistula remains the long lasting and the most dependable type of long term vascular access. Studies have shown that it has 90% at 1 year & more than 75% at 4 years patency rate⁵. Fistulas communication between the artery & vein, dilates and hypertrophies the vein. This arterIALIZATION of veins, which takes 6 weeks to develop is a sufficient access for hemodialysis. Brachiocephalic & Brachio-basilic arterio-venous fistulas are other types of secondary upper extremity vascular access.

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Fatty liver : A risk factor for chronic liver disease and new strategy for its management

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Introduction

The liver occupies a central position in lipid metabolism. A small, rapidly used pool of fatty acids (FFAs) absorbed from the diet or released into the blood from chylomicrons or fat cells, accommodates almost all of the energy requirements of a fasting animal. Free fatty acids are taken up by the liver to join hepatic pool of free fatty acid a portion of which the liver synthesizes. Some Free fatty acids are oxidized to CO₂ in the liver for energy, but most are rapidly incorporated into complex lipids (phospholipids, triglycerides, glycolipids, cholesterol esters etc.). Some of these complex lipids enter a slowly used pool that comprises the structural lipids of liver cells and their storage site. Most triglycerides enter an active pool where they combine with specific apoproteins to form lipoproteins (e.g VLDL), which are secreted into plasma. The liver is also responsible for lipid degradation. Fatty liver occurs when lipid accumulation exceeds.

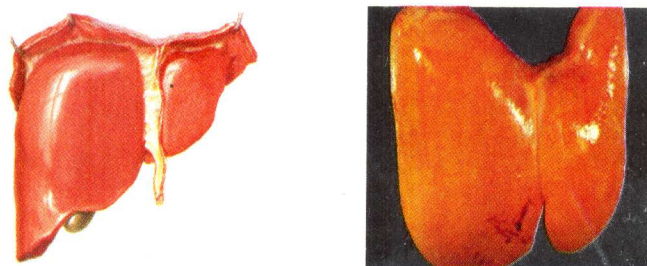


Figure 1: Normal liver

Fatty liver

Accumulation of fat largely triglycerides within liver parenchyma exceeds 5% of the liver weight is defined as fatty liver. It is caused by the failure of normal hepatic fat metabolism either due to a defect within the hepatocytes or to delivery of excess fat, fatty acid or carbohydrate beyond the secretory capacity for lipid of the liver cells. Fatty liver disease can range from fatty liver alone to fatty liver associated with inflammation (steatohepatitis). This condition can occur with the use of alcohol (alcohol related fatty liver) or in the absence of alcohol (NAFLD). Fatty liver associated with alcohol may occur with as little as 10 oz of alcohol ingested per week. Identical lesion can be caused by the other diseases or toxins.

Types

Aetiological:

1. Alcoholic Fatty Liver Disease (AFLD)
2. Non Alcoholic Fatty Liver Disease (NAFLD)

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Morphological:

1. Microvesicular
2. Macrovesicular

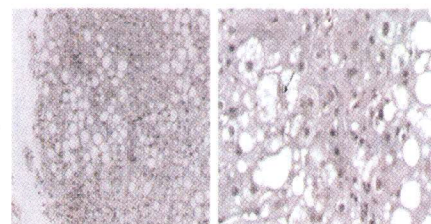


Figure 2: Microvesicular

Macrovesicular

Pathophysiology

Proposed mechanism of fatty liver disease:

- ❖ Increased delivery of dietary fat or fatty acid to the liver.
- ❖ Increased mitochondrial synthesis of fatty acids or reduced oxidation.
- ❖ Impaired export of triglyceride out of the liver cell.
- ❖ Excess carbohydrate delivery to the liver.

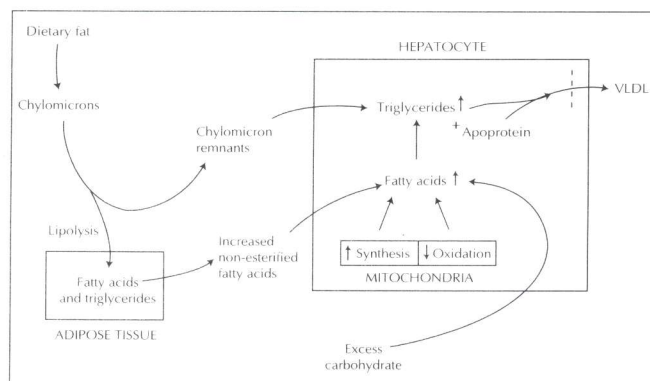


Figure 3: Showing pathogenesis of fatty liver disease

Non alcoholic fatty liver disease (NAFLD)

This paper mainly focus on non alcoholic fatty liver disease (NAFLD). NAFLD Ranges from nonalcoholic hepatic steatosis to nonalcoholic steatohepatitis (NASH). A large body of literature clearly indicates that NAFLD is strongly associated with the metabolic syndrome. Early studies identified obesity and diabetes as the two major risk factors for the development of NAFLD¹. It is known that hypertriglyceridemia and hypertension are also frequently present in subjects with NAFLD. The metabolic syndrome is characterized by constellation of findings including obesity, diabetes, hypertension and hypertriglyceridemia, principal risk factors for NAFLD² (Table-01). The fundamental pathophysiologic process that connects these diverse conditions is insulin resistance³ (Table-02). Insulin resistance is present in approximately 98% of individual with NAFLD and over 80% of subjects with NAFLD meet minimal criteria for the metabolic syndrome⁴. Approximately 47 million individuals are estimated to have the metabolic syndrome in the US⁵. Also, over 50% of the US

population is overweight (body mass index (BMI) $>25<29$) or obese (BMI >29). There are thus millions of individuals at risk for development of NAFLD and approximately 12-15% of the population is estimated to have NAFLD while 3-4% has NASH⁷.

Metabolic syndrome (Table-01) (ATP III recommendations)⁸

Component	Defining level
Glucose intolerance	Fasting glucose ≥ 6.1 mmol/l or known type 2 DM.
Central obesity	Waist circumference >102 cm for men & >88 cm for women.
Hypertension	$\geq 130/85$ mm Hg or on treatment.
Hypertriglyceridemia	Fasting triglyceride >1.7 mmol/l or current use of fibrates.
Low HDL-cholesterol	<1.0 mmol/l for men, <1.3 mmol/l for women.

[Metabolic syndrome is defined by the presence of three or more of these features
HDL, high-density lipoprotein; ATP; adult treatment panel]

Insulin resistance syndrome (Table-02)

Clinical feature	Definition
1. Diabetes Mellitus, glucose intolerance or hyperinsulinemia and two or more of the following.	
2. Hypertension.	140/90 mm of Hg or current documented use of antihypertensive medications.
3. Elevated triglycerides and/or decreased HDL lipoprotein levels.	TG >1.7 mmol/l
4. Central (truncal) obesity	Waist/hip ratio >0.9 for men and >0.85 for women.
5. Microalbuminuria	Urinary albumin excretion rate of 20 mcg/min.

Epidemiology

- ❖ 10-39% of the global population affected.
- ❖ 20% of average incidence.
- ❖ 50% of diabetics.
- ❖ 57-74% of obese persons.
- ❖ 90% of morbidly obese persons.
- ❖ It is the 2nd most common diagnosis after chronic viral hepatitis in USA.
- ❖ In USA over 30 million adults have NAFLD; of these 8.6 million have NASH.
- ❖ NASH is a major contributor of cryptogenic cirrhosis.

Aetiology

Common:

- ❖ Obesity
- ❖ Type II Diabetes Mellitus
- ❖ Hyperlipidaemia
- ❖ Medications
- ❖ Associated with insulin resistance syndrome and metabolic syndrome.

Others:

- ❖ Intestinal bypass
- ❖ Starvation
- ❖ Total parenteral nutrition
- ❖ Galactosemia
- ❖ Systemic disease
- ❖ Malnutrition
- ❖ Rapid weight loss
- ❖ Wilson's disease
- ❖ Fever
- ❖ Cryptogenic

Medications known to cause fatty liver:

- ❖ Glucocorticoids
- ❖ Aspirin
- ❖ Tamoxifen
- ❖ Tetracycline
- ❖ Cocaine
- ❖ Didanosine
- ❖ Bleomycin
- ❖ Calcium-channel blocker
- ❖ Synthetic estrogens
- ❖ Barium salts
- ❖ Methotrexate
- ❖ Valproic acid
- ❖ Zidovudine
- ❖ Antimony
- ❖ Coumadin

Natural history of NAFLD

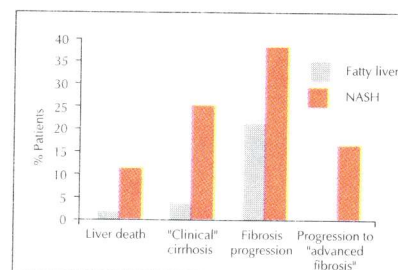
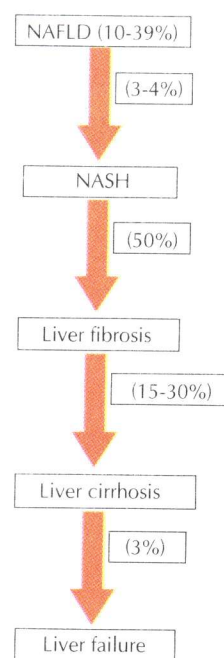


Figure 4: Natural history of nonalcoholic fatty liver and nonalcoholic steatohepatitis (NASH)⁸⁻¹⁴. Follow up ranged from 1 to 15 years in the different studies. Advanced fibrosis: bridging fibrosis or cirrhosis.

Pathogenesis of steatohepatitis (NASH)

Two hit theory:-

- First hit: First hit is the steatosis i. e. accumulation of fat within liver cell.
- Second hit: Fat deposition followed by oxidative stress, cytokines that produce inflammation & cell damage.

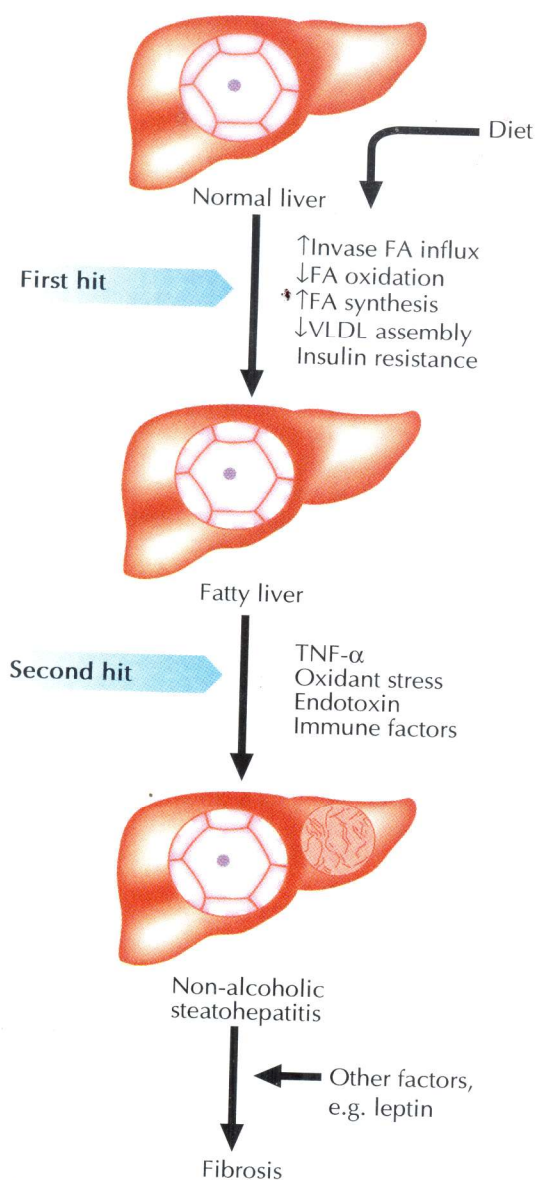


Figure 5: Pathogenesis of nonalcoholic steatohepatitis (NASH)

Mechanism of free fatty acid toxicity

- ❖ Membrane disruption (detergent effect) at very high concentration.
- ❖ Inhibition of Na⁺ / K⁺ ATPase.
- ❖ Inhibition of glycolysis.
- ❖ Uncoupling of mitochondrial beta-oxidation.
- ❖ Overall disruption of mitochondrial function.
- ❖ Dysregulation of intracellular calcium homeostasis.

Predictors of fibrosis in NASH

Body mass index over 30:

- ❖ 45 or more years of age.
- ❖ AST: ALT ratio greater than 1.
- ❖ Type-2 diabetes mellitus.

In those with BMI over 35:

- ❖ ALT > 40 U/L
- ❖ Hypertension
- ❖ Insulin resistance

Clinical features

- ❖ Asymptomatic.
 - ❖ Raised ALT.
 - ❖ USG finding of bright echogenic liver.
- ❖ Pain or discomfort in right hypochondrium.
- ❖ Smooth hepatomegaly.
- ❖ Features of underlying diseases.

Diseases should be excluded

- ❖ Alcoholic liver diseases.
- ❖ Chronic hepatitis B.
- ❖ Chronic hepatitis C.
- ❖ Hypothyroidism.
- ❖ Autoimmune liver diseases.
- ❖ Wilson's diseases.
- ❖ Haemochromatosis.

Investigations

- ❖ LFT.
- ❖ Blood sugar.
- ❖ Lipid profile.
- ❖ HBV marker.
- ❖ HCV marker.
- ❖ Thyroid function test.
- ❖ USG of hepatobiliary system.
- ❖ CT scan of liver.
- ❖ Laparoscopy, Biopsy.



Figure 6: USG of fatty liver disease

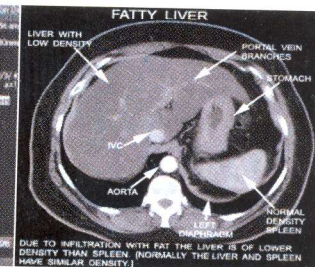


Figure 7: CT scan of fatty liver



Figure 8: Laparoscopic view of fatty liver

Histopathologic findings of NASH

- ❖ Steatosis.
- ❖ Hepatocyte ballooning degeneration.

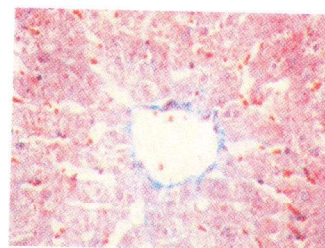


Figure 9: Histopathologic findings of NASH

- ❖ Intrahepatic inflammation.
- ❖ Perivenular & perisinusoidal collagen deposition.
- ❖ Mallory's hyaline body.
- ❖ Bridging septa.
- ❖ Cirrhosis.

Grading & staging of NASH

Grading:

- ❖ Grade 1 : Mild
Steatosis: Predominantly macrovesicular ranges from 33-66% of the lobules.
- ❖ Grade 2 : Moderate
Steatosis: Any degree usually mixed macrovesicular & microvesicular.
- ❖ Grade 3 : Severe. (florid steatohepatitis)
Steatosis: Mixed (Usually 66%).

Staging:

- ❖ Stage 1 : Zone 3 Perivenular, perisinusoidal or pericellular focal or extensive fibrosis.
- ❖ Stage 2 : Stage 1 plus focal or extensive portal fibrosis.
- ❖ Stage 3 : Bridging fibrosis, focal or extensive.
- ❖ Stage 4 : Cirrhosis with or without residual perisinusoidal fibrosis.

Differentiation of NASH from Alcoholic Steatohepatitis (ASH)

- History.
- AST/ALT ratio: AST/ALT ratio >2 in ASH.

Management

- **Weight reduction:-** (I) 0.5 kg/week for children.
(II) 1.6 kg/week for adult (not rapidly).
- **Good control of diabetes, hyperlipidaemia:-**
For DM insulin sensitizer drug:
Metformin, Pioglitazone, Rosiglitazone.
For hyperlipidaemia: Fibrates, Statins.
- **For obesity:-** Orlistat.
- **Use of cytoprotective drugs:-**
UDCA, Antioxidant, S-adenosylmethionine, Salmarine, Pentoxifylline.
- **Liver transplantation**

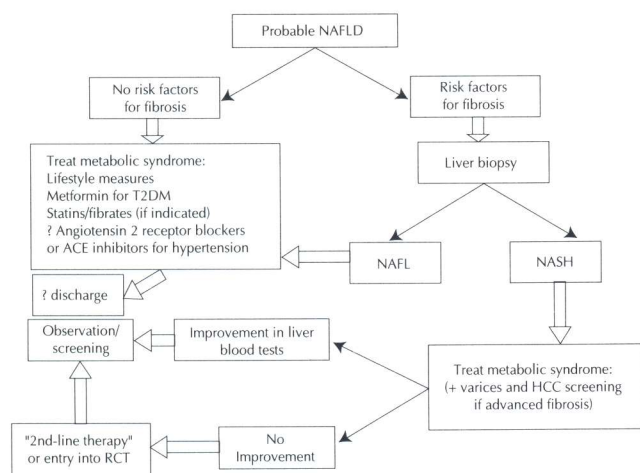


Figure 10: Management strategy for patient presenting with suspected non-alcoholic fatty liver disease. It is assumed that these patients have had other causes of abnormal liver blood tests excluded by history (for alcohol excess and hepatotoxic drugs) and serology (for autoimmune disease and viral hepatitis) and have steatosis detected on abdominal ultrasound. ACE, angiotensin converting enzyme; HCC, hepatocellular carcinoma; RCT, randomized controlled trials; T2DM, type 2 diabetes mellitus; NAFLD, non-alcoholic fatty liver disease; NASH, non-alcoholic steatohepatitis; HCC, hepatocellular carcinoma.



We should not be like



We should be like

Conclusion

At present there is no established therapy for NAFLD based on evidence from large RCTs. Treatment for all patients whatever the severity of their disease, should therefore be directed at the associated risk factors: obesity, type 2 DM, hyperlipidemia and hypertension. This strategy will reduce morbidity and mortality may also be beneficial to the liver. Patient with one or more risk factors for advanced NAFLD should probably undergo liver biopsy to determine their disease stage. Patients with advanced fibrotic disease should be followed up and enter surveillance programs for varices and HCC. For the future studies in animal models of NAFLD and pilot studies in humans have reported encouraging data for a variety of novel treatment strategies based on our increasing understanding of disease pathogenesis. It is hoped that within the next few years results from currently on going large clinical trials of these strategies will provide a firm evidence base for the use of safe, well tolerated life style modifications and/or pharmaceutical agents with beneficial effects on liver histology, currently the best available surrogate marker for long term prognosis¹⁵.

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Cerebral palsy

Daisy S¹

The ORION 2007 ; 26: 431-433

Introduction

Cerebral palsy is a condition that affects thousands of babies and children each year. It is not contagious, which means no one can catch it from anyone who has it.

The word cerebral means having to do with the brain. The word palsy means a weakness or problem in the way a person moves or positions his or her body. A kid with Cerebral palsy (CP) has trouble controlling the muscles of the body (hall mark of the condition is motor dysfunction, i.e. there is abnormal muscle tone, abnormal posture and movement). Normally, the brain tells the rest of the body exactly what to do and when to do it. But because CP affects the brain, depending on what part of the brain is affected, a kid might not be able to walk, talk, eat or play the way most kids do.

It is a non-progressive but often changing motor impairment syndromes. It is usually secondary to an insult of limited duration or anomalies of the brain arising in the early stages of development. (Viz. prenatal, intranatal, neonatal and post natal up to 5 years). The changing clinical picture results from developmental maturation and intervention. The clinical expression of the case depends on the extend and area of brain damage, growth of the child, coexisting developmental problems.

Signs and symptom

Symptoms of cerebral palsy can be as simple as having difficulty with fine motor tasks like writing or using scissors or as profound as being unable to maintain balance or walk. Severely affected patients may have involuntary movements, such as uncontrollable hand motions and drooling. Others suffer from associated medical disorders, such as seizures, speech problem, hearing problem, language disorder, ocular problem (i.e strabismus, refractory errors, fields defects), feeding difficulties, behavioral problems and mental retardation.

Types of Cerebral palsy (CP)

Cerebral palsy can be classified as:

1. Physiological
 - i. Spastic
 - ii. Dyskinetic (dystonic and athetoid)
 - iii. Hypotonic
 - iv. Ataxic
 - v. Mixed
2. Topographic
 - i. Quadri/tetraplegia
 - ii. Hemiplegia
 - iii. Diplegia
 - iv. Monoplegia
 - v. Triplegia

Spastic cerebral palsy (CP)

Spastic cerebral palsy (CP) is the most common type of cerebral

palsy. It causes the muscles to be stiff and permanently contracted. Spastic cerebral palsy is often sub classified as one of five types that describe the affected limbs. The names of these types combine a Latin prefix describing the number of affected limbs (e.g. di-means two) with the term *plegia* or *paresis*, meaning paralyzed or weak.

- ❖ Diplegia: either both arms or both legs.
- ❖ Hemiplegia: limbs on only one side of the body.
- ❖ Quadriplegia: all four limbs.
- ❖ Monoplegia: one limb (extremely rare).
- ❖ Triplegia: three limbs (extremely rare).

Spastic diplegia: Spastic diplegia affects the legs more than the arms. The legs often turn in and cross at the knees. This causes a scissors gait, in which the hips are flexed, the knees nearly touch, the feet are flexed and the ankles turn out from the leg, causing toe-walking. Learning disabilities and seizures are less common than in spastic hemiplegia.

spastic hemiplegia: Persons with spastic hemiplegia (hemiparesis) also may experience hemiparetic tremors-uncontrollable shaking of the limbs on one side of the body. Severe hemiparetic tremors can seriously impair movement. The arm is generally affected more than the leg. Learning disabilities, vision problems, seizures and dysfunction of the muscles of the mouth and tongue are classic symptoms.

Spastic quadriplegia: Spastic quadriplegia involves all four limbs. There is dysfunction of the muscles of the mouth and tongue, seizures, medical complications and increased risk for cognitive difficulties.

Dyskinetic cerebral palsy

Dyskinetic CP is characterized by slow, uncontrolled, writhing movements of the hands, feet, arms or legs (athetosis). Patients also may have abrupt, irregular, jerky movements (chorea), a combination (choreoathetosis) or slow rhythmic movements with muscle tone abnormalities and abnormal postures (dystonia). The muscles of the face and tongue may be affected, causing grimacing and/or drooling. When the muscles that control speech are affected, the patient experiences dysarthria (abnormal pronunciation of speech). Hearing loss is commonly associated with this form of CP.

Hypotonic cerebral palsy

Hypotonic CP characterized by marked motor delay and decreased tone. Often confused as a floppy infant. Preservation or a brisk DTR differentiates it from Lower motor neuron (LMN) cause of floppy infant. Sometimes it appears to be a temporary phase before hypertonia or dystonia eventually develops.

Ataxic cerebral palsy

Ataxic CP affects balance and depth perception. Persons with ataxic CP have poor coordination and walk unsteadily, usually placing their feet far apart. Many have trouble with quick or precise movements, like writing or buttoning a shirt. Some also have intention tremor, in which a voluntary movement, like

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reaching for an object, sets off trembling in the limb. The tremor becomes more intense as the person nears the target object.

Mixed CP

Mixed CP involves two or more types of cerebral palsy. While any mix of types and subtypes can occur, the most common are athetoid-spastic-diplegic and athetoid-spastic-hemiplegic; the least common is athetoid-ataxic. It is possible to have a mix of all three (spastic-athetoid-ataxic).

A kid with CP can have a mild case or a more severe case—it really depends on how much of the brain is affected and which parts of the body that section of the brain controls. No one knows for sure what causes most cases of cerebral palsy. For some babies, injuries to the brain during pregnancy or soon after birth may cause CP. Children most at risk of developing CP are small, premature babies, low birth weight (less than 5 pounds), delayed crying i.e. more than 5 minutes after, brain hemorrhage, breech deliveries (babies born with their foot or buttock presentation), complication during delivery or new born seizure or any birth defects. Some time the problem in the brain occurs before the baby is born and doctors don't know why.

Complication

Some people with CP have associated disorders, such as impaired intellectual development, seizures, failure to grow and thrive and vision and sense of touch problems. Roughly a third of patients with CP also have mild intellectual impairment, another third are moderately or severely impaired and the remainder, intellectually normal. Mental impairment is most common in children with spastic quadriplegia.

As many as half of all patients with cerebral palsy have:-

Seizures: In seizures uncontrolled bursts of electricity disrupt the brain's normal pattern of electrical activity. Seizures that recur without a direct trigger, such as a fever, are classified as epilepsy. Seizures generally are tonic-clonic or partial.

Tonic-clonic seizures: Tonic-clonic seizures spread throughout the brain, typically causing the patient to cry out, followed by unconsciousness, twitching legs and arms, convulsive body movements and loss of bladder control.

Partial seizures: Partial seizures are confined to one part of the brain and may be simple or complex. Simple partial seizures cause muscle twitching, chewing movement and numbness or tingling. Complex partial seizures can produce hallucinations, staggering, random movement and impaired consciousness or confusion.

Failure to grow or thrive: Children with moderate-to-severe cerebral palsy, especially those with spastic quadriplegia, often experience failure to grow or thrive and infants fail to gain weight normally, young children may be abnormally short and teenagers may be short for their age and may have slow sexual development. These phenomena may be caused by a combination of poor nutrition and damage to the brain centers that control growth.

Spastic hemiplegia: Some patients, particularly those with spastic hemiplegia, have muscles and limbs that are smaller than normal. Limbs on the side of the body affected by CP may grow slower than those on the other side. Hands and feet are most severely affected. The affected foot in cases of hemiplegia usually is the smaller of the two, even in patients who walk,

suggesting the size difference is due not to disuse but to a disrupted growth process.

Vision and hearing problems: Vision and hearing problems are more common in people with cerebral palsy than in the general population. Differences in the left and right eye muscles often cause the eyes to be misaligned. This condition, called strabismus, causes double vision; in children, however, the brain often adapts by ignoring signals from one eye. Because strabismus can lead to poor vision and impaired depth perception, some physicians recommend corrective surgery.

Hemianopia: Patients with hemiparesis may have hemianopia, a condition marked by impaired vision or blindness in half of the visual field in one or both eyes. A related condition, called homonymous hemianopia, causes impairment in the right or left half of the visual fields in both eyes.

Stereognosis: Sensations of touch or pain may be impaired. A patient with stereognosis, for example, has difficulty perceiving or identifying the form and nature of an object placed in their hand using the sense of touch alone.

Diagnosis

The diagnosis of CP is essentially involves detail history of prenatal, natal and postal history and careful physical and neurodevelopment examination to identify deficit type and topography, which is required for management. Early identification has significant implication for the family and necessitates early intervention to achieve the maximum holistic potential of the child. The philosophy behind early intervention is based on the following facts:

1. A neurological insult recovers better with stimulation.
2. I.Q. of emotionally deprived children is poorer than stimulated children.
3. The plasticity of the brain in the first decade of life provides a window of opportunity for active intervention.
4. Actually a child with CP is not hopeless. Half of the child with CP have average or above I.Q
5. With timely help and proper guidance a vast majority can lead active, self supporting and long lives.
6. Thus early diagnosis is prerequisite.

Evaluation

The diagnosis of CP is essentially clinical. It involves a detail prenatal, natal and postnatal history and careful physical and neurodevelopmental examination to identify deficit type and topography which is required for management.

Investigation

Laboratory test are not necessary to confirm diagnosis. Brain imaging studies including USG, CT and MRI may be useful in elucidating the etiology of CP and suggesting prognosis. Vision, auditory screening along with EEG should be done if patient is not improving after adequate physiotherapy.

Management

It is multidisciplinary approach.

Physical therapy: Through this helps the child walking, sitting and keeping his/her balance. Also to prevent contracture

Occupational therapy: Help the child develop fine motor skills such as dressing, feeding, writing and other daily living skills.

Speech therapy: To develop communication skill.

Feeding problem: Initially start with soft, small frequent feed. Drooling can be minimized by improving swallowing. Drugs

are not very effective.

Educational problem: Mild CP does well in mainstream schools. Moderate to severe CP need to be educated in special school.

Communication: Discourage sign language and encourage speaking.

Epilepsy: Should be treated. Many CP child may have subclinical seizure, So EEG is encouraged if the child does not improve. Subclinical seizure is very common, i.e. you cannot see the seizure but it is going on inside the brain. And for this CP child is not improving, even you are doing regular physiotherapy.

Spasticity: If it does not improve with physiotherapy, then Botulinum Toxin Type A injection can be given, which block release of acetylcholine from presynaptic terminal and blocks signal transmission at neuromuscular junction. It works for 3 - 5

months. Sometimes orthopedic help such as tendon lengthen can be done. Beclophen orally or intrathecal continuous pump can be implanted.

Conclusion

So early intervention is the key for improvement of CP, specially the first 2 years is most important. This is the time when brain is growing very fast. In simple word this is the express train. Try to catch it. If you miss it try to catch the local train, which is up to 5 years. Still it is better than something.

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MSD NEWS

Rajshahi

Sheba Medical Complex, Singra, Natore

Sheba Medical Complex, Singra, Natore arranged a round table meeting on "Role of ceftriaxone in treating various infections" at conference room on 21st September 2006. Dr. Md. Muzahidul Islam, MO chaired the session. About 35 doctors attended the meeting.

Gurudaspur THC, Natore

A round table meeting on "Role of Amino Acid in human body" was arranged by Gurudaspur THC, Natore at THC on 13th July 2006. Dr. Abdur Rahman, THO chaired the meeting. About 20 doctors were present at the session.

Sylhet

Osmani Medical College, Sylhet

Osmani Medical College, Sylhet arranged a round table meeting on "Role of Ceftriaxone in treating various infections" at Taradin Restaurant Sylhet on 11th October 2006. All doctors of Osmani Medical College attended the session and iftar party thereafter.



JRRMCH, Sylhet

On 12th October 2006, JRRMCH arranged a round table meeting on "Ceftriaxone" at Taradin Restaurant, Sylhet. All doctors of JRRMCH attended the meeting and iftar party thereafter.



Chittagong

Neurosurgery dept. CMCH

A round table meeting was arranged by Neurosurgery dept. CMCH on "ceftriaxone as a prophylactic agent in pre-operative cases" at neurosurgery classroom on 10th October 2006. Dr. Zillur Rahman, Prof. and head of dept. chaired the meeting. About 30 doctors attended the session.

Surgery unit-II, CMCH

Surgery dept. CMCH arranged a round table meeting on "Role of ceftriaxone in infectious diseases" at classroom of surgery unit-II, ward -25 on 15th October 2006. Dr. Yunus Harun, Asst Registrar chaired the meeting. About 60 doctors attended the session.

CCU, CMCH

On 15th October 2006 CCU, CMCH arranged a round table meeting on "Clognol plus in reduction of CHD risk" at classroom of cardiology unit. Prof. Munjur Morshed, Head of CCU chaired the meeting. Dr. S. C. Dhar, Asst. Prof. CCU was the key note speaker. About 40 doctors attended the session.

Mamata Maternity Clinic

A round table on "Vertex" was arranged by Mamata Maternity Clinic on August 15, 2006. Prof. Dr. Mahbubul Alam, Consultant chaired the session. About 35 doctors attended the session.

Intern Doctors Reception Programs

Dinajpur Medical College Hospital, Dinajpur

An intern doctor's reception program of Dinajpur Medical College Hospital was

held on 10th December 2006 at Martin Chinese Restaurant, Dinajpur. Orion Laboratories Ltd. arranged the program successfully. All the Assistant Registrar like Dr. Md. Abul Kalam Azad, Dr. Md. Sarowar-Ul-Islam, and Dr. S. K. Sadek were present on the occasion. About 100 intern doctors enjoyed the raffle-draw and prizes of the program.



Rajshahi Medical College Hospital, Rajshahi

A successful intern reception program of Rajshahi Medical College with batch-42 was held on 11th November 2006 at Darbar hall, Nanking Chinese restaurant, Rajshahi. It was sponsored by ORION Laboratories Limited. All doctors enjoyed the raffle-draw and prizes of the program.



Sylhet Medical College Hospital, Sylhet

An intern doctor's reception program of Sylhet Medical College Hospital held on 25th November, 2006 at Royal Chef Chinese Restaurant, Sylhet. Orion Laboratories Limited arranged the program successfully. Brig. general Md. Shah- E- Alam, director of SOMCH was the Chief Guest. About 240 doctors enjoyed the raffle-draw and prizes of the program.



Khulna Medical College Hospital, Khulna

Orion Laboratories Limited arranged a grand gala intern reception program of Khulna Medical College, which was held on 18th November 2006 at Hotel Castle Salam, Khulna. Dr. Hame Zamal, Superintendent was the Chairperson and Asso. Prof. & Principal of KMCH Dr. Syed Md. Elias was the Chief Guest. All doctors enjoyed the raffle-draw and prizes of the program.



Rangpur Medical College Hospital, Rangpur

Orion Laboratories Limited arranged a grand gala intern reception program of Rangpur Medical College which was held on 9th December 2006 at Zilla Parishad Centre, Rangpur. Dr. Md. Sohel Rana, Presdent IDA (2006-07) was the Chairperson & Dr. Md. Abdur Razzak Rubel, General Secretary IDA, was the Chief Guest. Dr. Abdulla-Al-Mamun, Dr. Md. sahidul Islam Robin, Dr. Tariqul alam Khan Romel, Dr. Md. Abu Hanif and about 200 intern doctors enjoyed the raffle-draw and prizes of the program.



Health camp

Rangpur

A health camp was arranged by Surgi Home Clinic, Rangpur at Laldigi High School, Rangpur on 25th August 2006. Prof. M. A. Sobhan was the chief guest. About 20 doctors prescribed the patients at the camp.



Cystic lesion of the jaws : An overview

Azim KA¹, Muhammad KN²

The ORION 2007 ; 26: 434-435

Definition

"A cyst is a pathological cavity usually with an epithelial lining, having fluid, semi-fluid or gaseous contents and not created by the accumulation of pus. But some other cysts are present which are not lined by epithelium, such lesions as traumatic cysts, mucous extravasation cysts, aneurysmal bone cysts or other cysts that occurs elsewhere in the skeleton are only pseudocysts."

Classification

1. Cysts with epithelial lining:
 - A. Odontogenic cysts
 - (i) Developmental cysts
 - a. Dentigerous cysts
 - b. Eruption cysts
 - c. Keratocysts
 - (ii) Inflammatory cysts
 - a. Radicular cysts (periodontal/ dental)
 - b. Paradental
 - (iii) Neoplastic cysts
 - a. Cystic Ameloblastoma
 - b. Calcifying odontogenic cysts
 - B. Non-Odontogenic cysts
 - (i) Nasopalatine and median palatine
 - (ii) Nasolabial
 - (iii) Median mandibular
 - C. Cysts of doubtful origin
 - (i) Globulomaxillary
2. Cysts without epithelial lining:
 - A. Solitary bone cyst (traumatic/ extravasation cysts)
 - B. Aneurysmal bone cyst

Relative frequency of different types of cysts:

Periodontal	65-70%
Dentigerous	15-18%
Keratocyst	03-05%
Nasopalatine	02-05%

According to WHO, 1987:

Radicular	57.7%
Dentigerous	13.7%
Nasopalatine	11.9%
Primordial	11.2%
Globulomaxillary	2.3%
Solitary	1.1%
Eruption cyst	0.9%
Nasolabial	0.7%
Lateral periodontal	0.3%

Gingival	0.1%
Aneurysmal	0.1%

Contents of the cysts

- ❖ Cholesterol crystal.
- ❖ Serum albumin & serum globulin.
- ❖ Protein rich exudate.
- ❖ If infected there is presence of inflammatory cells, such as dead neutrophils and tissues.

Mechanism of cyst formation

Proliferation of the epithelial lining and connective tissue capsule: The phenomenon of multiplication of epithelial cells has been identified but the initiating factor for its proliferation is only a matter of hypothesis. For example, epithelial fusion lines found lying dormant, but suddenly they multiply & form the lining of the pathological cavity. Once the cavity is lined by the epithelium, it assumes the role of a semi permeable membrane.

Accumulation of fluid within cysts and effect of hydrostatic pressure: The semi permeable membrane allowing tissue fluid to enter the cavity but preventing the fluid to pass out of the cavity. Such continuous intracystic accumulation (cystic fluid contents) accounts for the increased hydrostatic pressure above the capillary blood pressure. It is aided by increased osmotic pressure, attract the cavity.

Resorption of surrounding bone and new bone formation: Increased hydrostatic & osmotic pressure are responsible for building up internal pressure for establishment & growth of the cyst. Increased pressure & size of the cystic cavity causes release of the bone resorbing factor known as prostaglandin E₂ & E₃ which causes the resorption of the bone. This is how a new cyst is formed in the different area containing cystic fluid but not pus.

Symptoms

- ❖ Not frequently a cyst may be completely symptom less & the patient is quite unaware of the lesion until his attention is drawn to its existence by either his dental or medical adviser.
- ❖ In other cases the presence of the swelling or an intraoral discharge causes the patient to seek professional advice.
- ❖ Although some patients describe the taste of an intraoral discharge as being unpleasant, others may describe it as being either salty or sweet.
- ❖ In the later case the discharge is frequently found to be purulent.
- ❖ Acute infection of the cyst may cause the patient to present a large acute abscess, whilst less severe infection may cause a dull throbbing pain.
- ❖ In large mandibular cysts this later symptom may be accompanied by impairment of sensation in the lower lip on the affected side.
- ❖ In very rare instances pain and impairment of the labial sensation may be caused by a non-infected cyst of the mandible and in these circumstances the symptoms are usually attributed to pressure.
- ❖ In completely or partially edentulous patients a cyst may be

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the cause of either discomfort under or difficulty in wearing dentures.

- ❖ Adjacent natural teeth may be either moved or tilted as the lesion expands.

Signs

Although some small cysts do not present any clinical signs & can only be detected by means of radiography, the vast majority of the cysts are characterized by swelling. Although the descriptive term "egg-shell crackling" has long been associated with intra-bony cysts, palpation may reveal the swelling to be either frankly fluctuant or bony hard. In the other cases the characteristic feeling of the "egg-shell crackling" may be noted, whilst on occasions the thin bone overlying the lesion is springy to the touch. It must be emphasized that none of these findings on palpation is diagnostic of the presence of a cyst, for they are related solely to the thickness of the bone overlying the lesion at the site of examination. The findings vary from area to area. The soft tissues overlying a cyst may be normal in color, but when the lesion has perforated the enclosing bone, the soft tissue often have a bluish tinge if the lesion is uninfected and are dark red if it is accurately infected. In the later instance the tissue will be tender to touch.

Radio graphic appearances

The classic description of the radiographic appearances of intra-bony cysts is an area of radiolucency surrounded by radio-opaque line of condensed bone.

Histopathology

Histological examination shows:

- ❖ Proliferation of epithelial cells.
- ❖ Presence of granulation tissue, inflammatory cells such as neutrophils.
- ❖ Deposition of cholesterol.
- ❖ The crystals are discharged into the cystic cavity leaving characteristic cholesterol cleft.
- ❖ Sometimes contains giant cell, hyaline bodies.

Treatment method

The treatment method of cysts are modifications in two techniques:

- A. If small, total enucleation is applied.
- B. If large, marsupialization is carried out.

A. *The technique of enucleation:* This procedure essentially consists of complete removal of the entire cysts lining and primary closer of the wound so that the bony cavity is allowed to be obliterated by regeneration of bone from all around. Healing of the cavity is completed in 6-9 months period depending on the size of the cyst cavity. The mechanism is described below:

- ❖ A mucoperiosteal flap is raised to gain access into the cystic cavity.
- ❖ After the flap is elevated, the area of bony expansion is identified and at the thinned bony wall, a window is made to get entry into the cysts.
- ❖ A plane cleavage is utilized between the cystic lining and the bony wall to dissect out the cystic sac in one plane along with the contents out of the bony wall.
- ❖ Then it is subjected to histopathological examination.
- ❖ If any tooth or root is involved in the cyst formation, the necessary treatment for that tooth is carried out either by extraction or by apicectomy with apical seal.
- ❖ Now the cavity is cleaned and the bony margins are

smoothened.

- ❖ Once the homeostasis is achieved, the flap is repositioned.
- ❖ The wound margins are closed with interrupted sutures.
- ❖ Sutures are removed on 6th and 7th post-operative days.

B. *The technique of marsupialization:* The design of this technique ensures the patency of the opening created on the cyst wall for the purpose of decompression until the cavity is obliterated by filling up the cavity by bone regeneration in layers. As the layers of bone are removed, the cavity becomes shallower until the floor of the cavity gradually comes to the surface. The marsupialization procedure is done in the following way:

- ❖ Preoperatively, the extent of the cystic cavity evaluated by clinical and radiological examination. This is useful to design the mucoperiosteal flap and the bony window.
- ❖ Incision is made deep to the bone and the soft tissue are elevated to expose the bony wall.
- ❖ A window is created in the bony wall with a chisel and without bur.
- ❖ The fluid content of the cyst is evaluated.
- ❖ The cyst lining and soft tissues around the opening are sutured together.
- ❖ The cavity is packed with ribbon gauze with whitehead's varnish.
- ❖ The cavity is periodically irrigated and pack is renewed once in a few days until the entire cavity is obliterated by bone regeneration.

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Information for Authors

The followings are the minimum requirements for manuscripts submitted for publication -

The MANUSCRIPT should be prepared according the modified Vancouver style as proposed by the International Committee of Medical Journal Editors (ICMJE). The entire uniform requirements document was revised in 1997 which is available in the Journal of American Medical Association (JAMA. 1997; 277:927-934) and is also available at the JAMA website. Sections were updated in May 1999 and May 2000. A major revision is scheduled for 2001. The following section is based mostly on May 2000 update.

THREE COPIES of the manuscript should be sent in a heavy paper envelope. Manuscripts must accompany a covering letter signed by all authors. This must include (i) information on prior or duplicate publication or submission elsewhere of any part of the work as defined earlier in this document (ii) a statement of financial or other relationships that might lead to a conflict of interest (iii) a statement that the manuscript has been read and approved by all the authors, that the requirements for authorship have been met and (iv) the name, address, and telephone number of the corresponding author, who is responsible for communicating with the other authors about revisions and final approval of the proofs. The letter should give any additional information that may be helpful to the editor.

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Prevalence of coronary heart disease among the rural people with risk factor analysis

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The ORION 2007 ; 26: 436-437

Abstract

This prospective study was conducted in a Rural Community Heart Care Centre, Chatkhil, Noakhali for the period of one year from July 01, 2005 to June 30, 2006. Over 300 adult human subjects of coronary heart disease diagnosed by clinical, ECG, x-ray, Echocardiography, biochemical examinations. The objectives of this study were to study the prevalence of coronary heart disease (CHD) among the rural people; to determine age, sex, occupation of rural CHD patients; to study various ECG & biochemical parameters in CHD patients. Out of 300 patients, male-195 (65%) & female-105 (35%). Peak incidence of CHD was observed in 50-59 & 60-69 years age group: 121(40.33%) & 65(21.66%) respectively. Occupational variations show maximum incidence of CHD in businessmen (164 cases, 54.66%). Risk factors analysis showed smoking 63%, hypertension 40% & diabetes 40% cases.

Introduction

Coronary heart disease has been defined as impairment of heart function due to inadequate blood flow to the heart compared to its needs caused by obstructive changes in the coronary circulation¹.

It is the cause of 25-30 percent of deaths in most industrialized countries. The WHO has drawn attention to the facts that CHD affects population not only elderly but also young adults due to some unavoidable situation attributed by risk factors.

The natural history of CHD is very variable. Death may occur in the first episode or after a long history of disease². CHD may manifest itself in many presentation: (a) angina pectoris, (b) heart failure (c) sudden death etc. Non-modifiable risk factors are age, sex, family history, genetic factors, high personality etc. Modifiable risk factors are cigarette smoking, high blood pressure, diabetes, obesity, sedentary works, stress, elevated serum cholesterol level etc.

Aims & Objectives

- To study the prevalence of coronary heart disease among the rural people.
- To determine age, sex & occupation of rural CHD patients.
- To study various ECG & biochemical parameters, specially S. lipid components in CHD patients.
- Finally to recommend some preventive measures against coronary heart disease.

Materials & Methods

This prospective study was conducted in a rural health centre-"THE HEART", a Community Heart Care Centre, located in

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Chatkhil, Noakhali. Study period was one year i.e. July 01, 2005 to June 30, 2006.

Patients presented with chest pain were selected for study. They were evaluated clinically, followed by ECG, X-ray chest, Echocardiography, biochemical tests (S. lipid profile) etc. were performed.

Data were collected through a prescribed proforma and the results of study were narrated in tabulated forms.

Table-I: Sex distribution of CHD patients (n=300)

Gender	Number	Percent
Male	195	65
Female	105	35

Table-II: Age distribution of CHD patients (n=300)

Age group (in years)	Number	Percent
30-39	31	10.33
40-49	48	16
50-59	121	40.33
60-69	65	21.66
70-79	35	11.66

Table-III: Occupation of CHD patients (n=300)

Occupation	Number	Percent
Service-holders	105	35
Businessman	164	54.66
Teachers	17	5.66
Day labourers	5	1.66
Rickshawpulers	3	1.00
Fishermen	4	1.33
Beggar	2	0.66

Table-IV: Risk factors in CHD patients (n=300)

Risk factors	Number	Percent
Smoking	189	63
Hypertension	120	40
Diabetes	120	40
Obesity	105	35
Sedentary works	93	31

Table-V: Various ECG changes in CHD patients (n=300)

ECG changes	Number	Percent
Ant. ischaemia	45	15
Inf. ischaemia	61	20.33
Lateral ischaemia	47	15.66
Old MI (Ant)	55	18.33
Old MI (Inf.)	49	16.33
OMI (Ant+Inf)	43	14.33

Table-VI: S. cholesterol status in rural CHD patients (n=300)

Cholesterol status	Number	Percent
Normal	21	7
Mild elevation >300 mg/dl	67	22.33
Moderate elevation >350 mg/dl	142	47.33
Severe elevation >400 mg/dl	70	23.33

Discussion

Table-I showed gender distribution of CHD patients where male-195 cases (65%), female-105 cases (35%). There is less incidence of CHD in female patients most likely due to sex hormonal defence system³.

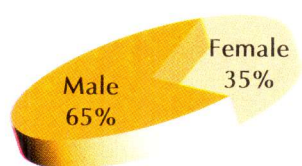


Figure : Gender distribution of CHD patients

Table-II showed age distribution of CHD patients. Mostly affected age group is 50-59 years; 121 cases (40.33%), second affected age group is 60-69 years; 65 cases (21.66%). In this study CHD observed in a very earlier age group, 30-39 years (31 cases, 10.33%); which is almost similar with the findings of Dewansr BR & co-workers in 2004 (11.74%)⁴.

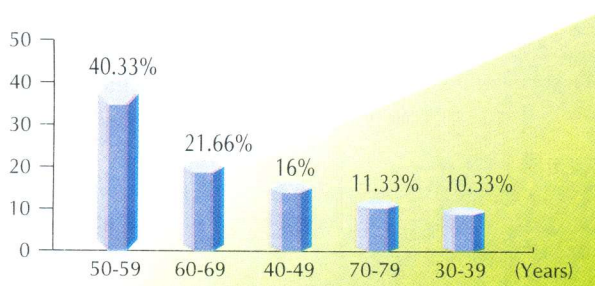


Figure : Age distribution of CHD patients

Table-III showed various occupation of rural CHD patients. Mostly affected group is businessmen-164 cases (54.66%). Second affected group is service-holders of various categories (105 cases; 35%). Least incidence of CHD was observed in day-labourers (5 cases, 1.66%); Rickshawpuller (3 cases, 1.00%), Fishermen (4 cases, 1.33%), Beggars (2 cases, 0.66%). Mobile, hard working, laborous group showed comparatively

less incidence of CHD in other study⁵.

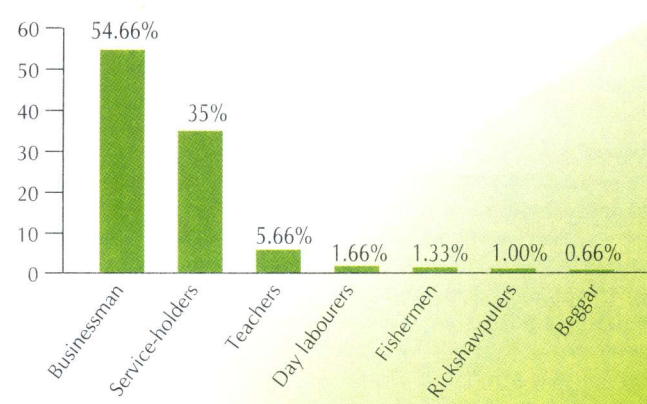


Figure : Occupation of CHD patients

Risk factors in CHD patients were showed in table-IV. Hypertension & diabetes are equally responsible to be the risk factors of CHD. In this rural based study smoking had headed the list (189 cases, 63%). Sedentary works is another detrimental risk factor (93 cases, 31%).

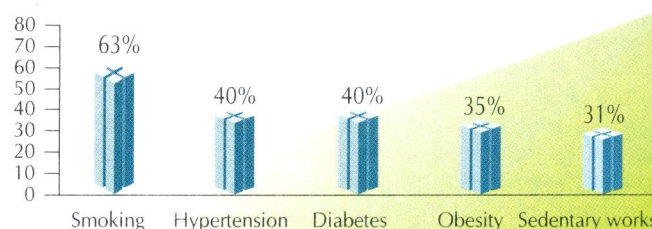


Figure : Risk factors in CHD patients

Except 21 cases dyslipidaemias were observed in 279 cases. Moderate elevation of serum total cholesterol was observed in 142 cases (47.33%).

With the advent of urbanization & industrialization rural people are also more inclined to intake fatty food containing saturated fatty acids of various natures & components⁶.

Conclusion

The global scenario of CHD in Bangladesh is worsening day by day. Prevalence rate was found 7.8 & 5.1 percent in males and females respectively. The peak period of CHD was found 51-60 years. Males are affected more than the females. Hypertension and diabetes account for about 40 percent of all cases. Smoking is also found responsible etiologically in a good number of cases. So, our slogan is - "Save the heart from smoking & fat".

Acknowledgement

This research work was conducted with the compliments of Ministry of Science and Information & Communication Technology; Bangladesh.

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Bilateral dacryocystectomy in one sitting is convenient then in two sitting : A retrospective study

Murad MAU¹, Basory R², Chowdhury FI³

The ORION 2007 ; 26: 438-439

Abstract

Objective: The study compared the effect of bilateral dacryocystectomy in one sitting over the unilateral dacryocystectomy. **Method:** This retrospective study was carried out in which 27 patients attended at OPD of Islamia Eye Hospital, Dhaka during the period from January 1997 to October 2000. Those who were suffering from chronic dacryocystitis of both eyes attend hospital for their operation and management. **Results:** Out of 20 bilateral dacryocystectomy 18 were cured and in 6 months follow up no recurrence otherwise unilateral dacryocystectomy were on 7 patients of which 6 did not turn up for operation of other infected eye. So failure rate was 85.8%. Ages of the patients were between 70 to 80 years. **Conclusion:** The study concludes that bilateral dacryocystectomy was more convenient both for the patient and the surgeon.

Key word

Dacryocystectomy, Bilateral and Unilateral.

Introduction

Dacryocystitis is an inflammatory condition of the lacrimal sac (tear sac), which is often due to an obstruction of the nasolacrimal duct (tear duct). Chronic infections are more common than acute episodes. It is divided into 3 types- acute, chronic and developmental. Incidence is 17.9% of total attendance in eyeOPD. "Male & female ratio of dacryocystitis patient was 1:2. Most of the patients were poor (54.8%) and illiterate (80.39%) The prevalence was highest 41.2% in age group 41-60 but above 60 age group, characteristically male preponderated".

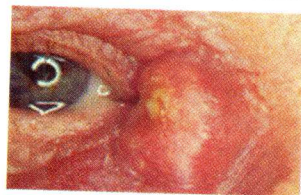


Figure : Dacryocystitis

"Dacryocystitis is highly prevalent in Bangladesh. Among the hospitalized eye patients, the bed occupancy rate by dacryocystitis is next to cataract". Acute cases can be treated conservatively but in chronic cases it needs surgical interference. Usually dacryocystorhinostomy [DCR] is the choice of operation. But dacryocystectomy is indicated for old & debilitated patients where DCR was contraindicated. "With the increasing age it is common for aqueous tear production to decrease". Treatment of dacryocystitis is important as because, it is a constant source of infection. It may cause conjunctivitis, corneal ulcer, corneal perforation, uveitis and endophthalmitis. "Untreated dacryocystitis never goes spontaneous resolution".

Methodology

This was a retrospective study. During the study period 27 patients were selected from OPD of Islamia Eye Hospital during the period of January 1997 to October 2000.

Through examination on both ocular and systemic were done. Following investigations were routinely done for all patients.

1. Vision.
2. Sac patency test.
3. Slit lamp biomicroscopy.
4. External examination by well illuminated torch.
5. Random blood sugar with corresponding urine.
6. ECG.

In this study the patients of cardiovascular, respiratory diseases and extreme old age with other ocular pathology were excluded.

Operation

Under local anesthesia a mixture of lidocaine 2% and bupivacaine 0.5% [3ml+3ml] 6ml were used in the presence of anesthesiologist. An oblique incision of 4 to 5 mm was given over the lacrimal sac area 2 to 3 mm away from the medial canthus. Incision was given by BP blade & wound was enlarged by blunt dissection with artery forceps. Orbicularis oculi muscle was split by sac dissector. Medial palpebral ligament were incised. Lacrimal sac were visible. Sac were caught by artery forceps and twisted and removed as far as possible by cutting the distal part of the lacrimal sac.

Two to three minutes time was taken to see any abnormal bleeding and stitched of the skin with 6/0 vicryl. 20 patients were given interrupted suture and 7 patients were given cosmetic [i.e. Intradermal] by 6/0 silk. Which were remove after 7 days. Same procedures were maintained on the other eyes. Before starting the operation diclofenac sodium & lidocaine injection 2 ml were given on the gluteal region [deep I/M]. After completion of the operation procedure, the pad and bandage were given eyes were not covered.

Follow up of the patients on 24 hours, 3 days, 7 days, 3 weeks and 3 months. After 24 hours remove the pad and bandage. Slight oedema around the operated area were seen but it subsides automatically with in 7-10 days.

Results

Results in this study shows that bilateral dacryocystectomy can be done in one sitting without any complication. Out of 27 patients 20 patients were done bilateral dacryocystectomy (74%).

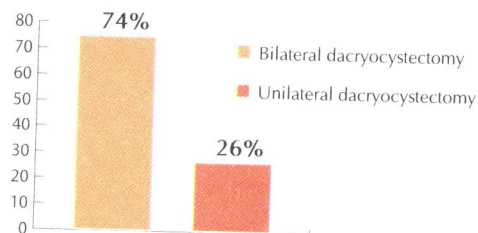


Fig: Results of dacryocystectomy

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In this series two patients did not turn up so it was not known of the fate of those two patients. In other series of 7 patient who had unilateral dacryocystectomy (26%) and they came for follow up for one month and then 6 patients out of 7 did not turn up for follow up and other side operation.

Discussion

Dacryocystitis is a common ocular disease in rural areas. Most of the patients are living below poverty level. They have no extra budget for health. In rural areas dacryocystitis is called 'Nali' in colloquial languages. "Dacryocystitis is more common in female especially at menopausal and post menopausal age". "At this stage of life there is hypertrophy of mucous membrane of lacrimal drainage system, which becomes more easily infected than usual and can obstruct congenitally narrow bony nasolacrimal canal. This ultimately leads to stasis of tears where infection can easily be ensured".

"Source of water for use may have some role in the aetiology of dacryocystitis, which needs to further works". Poor economic status is directly related to the prevalence of dacryocystitis. However, old established cases of dacryocystitis is not curable by the medical means, surgical interference is ultimately needed. So definite steps should be taken in this regards. Eye care facilities should be extended to the rural poor people. From the result of study it is evident that those who have unilateral operation did not turn up (85%) for other side of

operation there are many factors for this failure. Patients are elderly usually come from village and they don't have place to stay in the city so failure is more evident. There was study where "out of 51 only two patient attained eye specialist and both of them were literate".

Conclusion

From this study the result of this series found that bilateral dacryocystectomy can be done without complication in one sitting. By this type of operation time, money, theatre and bed occupancy can be saved. So it is recommended that a longer series of operation of bilateral dacryocystectomy in one sitting should be done and if the results are favorable then it can be adopted for universal procedure.

Acknowledgement

Authors are grateful to Prof. M. S. ALAM Ex-Chief Consultant, Department of anesthesiology, Bangladesh Medical College, Uttara, Dhaka.

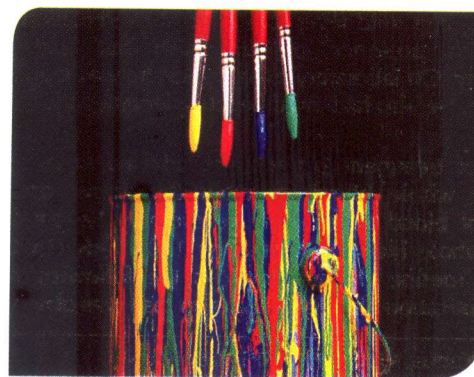
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Transfusion associated GVHD : A case report

Yunus ABM¹, Habibullah MM², Khatun A³, Ferdous J⁴

The ORION 2007 ; 26: 440

Summary

Mr. Zahedul Islam, age 23 yrs, is a known case of Acute Myeloid Leukaemia (AML), presented with watery diarrhoea, nausea, vomiting and fever following 1 unit (450 ml) of fresh whole Blood Transfusion. On clinical examination he was found with mild rise of temperature, skin rash and in the laboratory findings pancytopenia were present. Clinically he was diagnosed as a case of transfusion associated Graft Vs. Host disease (TA-GVHD). Later on, following irradiated blood transfusion (with 1500 rads) watery diarrhoea and other symptoms of GVHD did not develop.

Index word

TA-GVHD and irradiated blood unit.

Introduction

Graft Versus Host Disease (GVHD) frequently occurs after Bone Marrow Transplantation, but in the last two decades there has been an increasing incidence of GVHD following Blood Transfusion (TA-GVHD). It occurs between 4 to 30 days after Transfusion and is severe with a mortality rate as high as 90% (Von Fliedner et al, 1982 London). Here we report a case of TA-GVHD possibly the first reported case in Bangladesh.

Case report

A diagnosed case of Acute Myeloid Leukaemia (AML) had been receiving treatment in "Green View Clinic" of Dhaka under the 1st author, the patient was Mr. Zahedul Islam (23 yrs). Since the patient was anaemic along with chemotherapy the patient was advised to have Blood Transfusion as palliative therapy to correct his anaemia.

Mr. Zahedul Islam have had watery diarrhoea following fresh whole Blood Transfusion (72 hrs after transfusion) along with nausea, vomiting and mild fever. On clinical examination he was found with presence of skin rash but had no lymphadenopathy. On laboratory examination he was found to be pancytopenic. He also had mild hepatosplenomegaly.

In the course of treatment patient was advised to receive irradiated fresh whole blood to avoid the above drastic complications of blood transfusion. Accordingly he got five units of fresh whole blood irradiated by 1500 rads (15 Gy) along with his routine chemotherapy in the following five weeks. No complication like diarrhoea, skin rash was observed

which he experienced previously with non irradiated blood transfusion. Thus the patient was managed successfully.

Discussion

GVHD is a syndrome where foreign cells mount an assault on the tissues of the host after successful transplantation or engraftment¹. This syndrome is produced following successful engraftment of allogenic T lymphocytes or their precursors, if they are HLA incompatible². Particularly:

- ❖ In subjects with immature immunological system (parkman et al, 1974,UK).
- ❖ In subjects with impaired immunological system³.
- ❖ In patients with impaired immunological system by cytotoxic drugs⁴.
- ❖ In non-immunocompromized patients TA-GVHD may occur when the donor is homozygous for one of the patients HLA haplotypes⁵.

Here in this case TA-GVHD occurred in Mr. Zahedul Islam was due to cytotoxic drugs-as he has been on chemotherapy for AML.

TA-GVHD is under diagnosed because the syndrome usually affects patients who are already severely ill and the combination of symptoms may be wrongly attributed to underlying disease, intercurrent infection or severe reaction to a drug. Consequently the frequency of TA-GVHD is unknown². TA-GVHD occurred in one of 659 immunocompetent patients following cardiac surgery with transfusion of fresh blood in Japan⁶.

Conclusion

Because of homozygosity for HLA haplotypes TA-GVHD is relatively frequent following non-irradiated blood transfusion. In order to avoid the risk of GVHD from transfusion of blood to the patients with immunological deficiency, the blood/ blood products should be treated with 1500 rads (15 Gy) before being transfused⁷. This dose of radiation abolishes the response of lymphocytes in mixed lymphocyte culture. Incidentally the dose of radiation required to impair red cell survival is far greater than this, 35000 rads (350 Gy) or more (Schaffer et al, 1966). When first degree relatives are used as a donor irradiation of blood has been advised, even in recipients who are not immunocompromized (AABB, 1989) although everyone does not support this view (Avoy, 1990).

Acknowledgement

Authors are very much grateful to the staffs and employees of Quantum Voluntary Blood Donation Centre and Green View Clinic where this study carried on and also oblige to Mr. Zahedul Islam, reported case, for his consent to publish this article.

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Seborrheic Keratosis : A case report

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The ORION 2007 ; 26: 441-442

Summary

A 72-years-old male patient reported to me at my chowmuhan outdoor chamber with numerous black sharply demarcated tumorous skin lesions. The lesions were located mostly over the chest, face and back. They were largely papules, plaques and nodular ones. Mucous membranes found free of lesions. Itching was moderate in nature. Patient told that while he was 40, he has noticed one flat sharply demarcated brown macule, which gradually became polypoidal over chest. In course of time the lesion gradually spreads over face, trunk and back, which increases its number and size. Under thorough clinical examination and histopathological report, it has confirmed a case of Seborrheic keratosis. Other than symptomatic treatment patient was treated with Liquid nitrogen (Cryosurgery) and Electrofulguration (Electro surgery) in six sessions with the interval of 15 days. Patient was completely cured with slight hypopigmented spot.

Introduction

Seborrheic keratoses are multiple oval, slightly raised, light brown to black, sharply demarcated papules or plaques rarely more than 3 cm in diameter, located mostly on the chest and back but also commonly involving the scalp, face, neck and extremities. The palms and soles are spared; "Seborrheic Keratoses" in these areas are usually eccrine poromas. These lesions can appear on any part of the body except mucous membranes. Seborrheic keratoses typically begins as flat, sharply demarcated brown macules. As they progress they become polypoidal, with an uneven surface. Follicular prominence is one of the hallmarks of Seborrheic keratoses. This can either be caused by pale follicular plugs within a darker lesion or by black or brown plugs within a pale lesion. Colors of these lesions can vary from a pale brown with pink tones to dark brown or black.

Some patients have hundreds of these lesions on the trunk. The age of onset is generally in the fourth to fifth decade. Some believe the pathogenesis of Seborrheic keratoses is a development resulting from a local arrest of maturation of keratinocytes that are normal in other respects. They usually originate de novo but may also evolve from lentigines. They may increase in number when the patient is gaining weight.

Histopathology of Seborrheic keratosis

The Seborrheic keratosis is a combined hyperplasia of epidermis and supporting papillary connective tissue. Six histologic type-hyperkeratotic, acanthotic, adenoid or reticulated, clonal, irritated and melanoacanthoma are distinguished. All types of Seborrheic keratosis have in common hyperkeratosis,

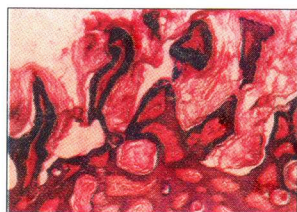


Figure: Histopathology of seborrheic keratosis

acanthosis and papillomatosis. The acanthosis in most instances is entirely due to upward extension of the tumor. Thus the lower border of the tumor is even and lies on a straight line that may be drawn from the normal epidermis at one end of the tumor to the normal epidermis at the other end. Two types of cells are usually seen in the acanthotic epidermis: Squamous cells and basaloid cells. The former have the appearance of squamous cells normally found in the epidermis, whereas basaloid cells are small and uniform in appearance and have a relatively large nucleus.

Case report

A 72-years-old male patient named Shamsul Haque, a retired defense personal from Maizdee (Noakhali) reported to me on April 06 with numerous skin lesions over his exposed and covered areas of the body. He told that while he was 40 years of age he first noticed one flat, sharply demarcated brown macule over his chest. With the extension of time it gradually became polypoidal with rough surface. Then the lesion increases in respect of size, number and areas of involvement of the body. In course of time except palms, soles and mucous membrane whole body surface became involved. Frequently he felt moderate itching. During his active Service in Army, he was being treated in different CMH'S, but the treatment was inadequate.

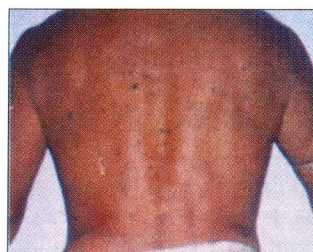


Figure : Before treatment



Figure : After treatment

When his face became completely involved with keratotic lesion he felt embarrassed due to cosmetic purpose. Patient's socioeconomic condition is poor. He told that with the increase of his body weight, the number and size of the lesion gradually increases. One nodular lesion was taken from chest under L/A and sent for Histopathology. The report was a case of Seborrheic keratosis. Accordingly Cryosurgery and Electrofulguration was done simultaneously in six sessions with the interval of 15 days. Patient was completely cured and free of lesion except some hypopigmented areas over face and chest.

Discussion

Seborrheic keratoses are an annoyance. Lesions around the neck can catch on clothing, as can lesion around the waist. Others can grow to become cosmetically undesirable, whether on the face or on the trunk. Many can cause concern because of confusion with nevi and the thought that the lesion is becoming a malignant melanoma. Conversely dysplastic nevi or malignant melanoma can lurk in a forest of Seborrheic keratoses and be undetected until a late stage, posing a

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significant danger. The etiology of Seborrheic keratoses is unknown. In patients with a great number of Seborrheic keratoses, there may be a positive family history. This may well reflect a genetic propensity. Seborrheic keratoses have sometimes been blamed on sun exposure. There is a propensity for the large type of Seborrheic keratoses to develop in areas of intermittent sun exposure, such as the back and anterior chest. Because of the verrucous appearance of Seborrheic keratoses, human papilloma virus (HPV) has also been suggested as a possible etiology. Epidermal growth factor (EGF) are implicated in the development of Seborrheic keratoses. The eruptive appearance of multiple Seborrheic keratoses (The sign of Leser-Trelat) in association with various internal malignancies and with concomitant Acanthosis nigricans, another epidermal hyperplastic phenomenon, suggests the possibility that a tumor-derived circulating growth factor or humoral factor may be involved in the pathogenesis of these lesions. Melanocyte hyperplasia is commonly seen in Seborrheic keratoses. It has been suggested that melanocyte or melanocyte-derived growth factors may have a role in the development of Seborrheic keratoses.

Conclusion

Seborrheic keratoses is not uncommon in our country but rural people are most frequently involved than Urban. Basal Cell Carcinoma and other common skin Cancers have been reported rarely in association with Seborrheic keratoses.

Malignant melanoma in association with Seborrheic keratoses has rarely been reported. It has been suggested that Basal Cell carcinoma, Squamous Cell carcinoma, and Melanoma associated with Seborrheic keratoses may arise from the basaloid cell, spinous cells and melanocytes that comprise Seborrheic keratoses. Most likely, however, malignant association with Seborrheic keratoses represent a Collision phenomenon.

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The Nobel Peace Prize 2006



Oslo, 13 October, 2006

The Norwegian Nobel Committee has decided to award the Nobel Peace Prize for 2006, divided into two equal parts, to **Muhammad Yunus** and **Grameen Bank** for their efforts to create economic and social development from below. Lasting peace can not be achieved unless large population groups find ways in which to break out of poverty. Micro-credit is one such means. Development from below also serves to advance democracy and human rights.

Muhammad Yunus has shown himself to be a leader who has managed to translate visions into practical action for the benefit of millions of people, not only in Bangladesh, but also in many other countries. Loans to poor people without any financial security had appeared to be an impossible idea. From modest beginnings three decades ago, Yunus has, first and foremost through Grameen Bank, developed micro-credit into an ever more important instrument in the struggle against poverty. Grameen Bank has been a source of ideas and models for the many institutions in the field of micro-credit that have sprung up around the world.

Every single individual on earth has both the potential and the right to live a decent life. Across cultures and civilizations, Yunus and Grameen Bank have shown that even the poorest of the poor can work to bring about their own development.

Micro-credit has proved to be an important liberating force in societies where women in particular have to struggle against repressive social and economic conditions. Economic growth and political democracy can not achieve their full potential unless the female half of humanity participates on an equal footing with the male.

Yunus's long-term vision is to eliminate poverty in the world. That vision can not be realised by means of micro-credit alone. But Muhammad Yunus and Grameen Bank have shown that, in the continuing efforts to achieve it, micro-credit must play a major part.

"for their efforts to create economic and social development from below"



Muhammad Yunus
1/2 of the prize



Grameen Bank
1/2 of the prize

Leech in the peritoneal cavity : An unusual cause of intestinal obstruction

Rahman MS¹

The ORION 2007 ; 26: 443-444

Abstract

A 3 years old girl admitted in the paediatric surgery department of Sylhet Medical College Hospital with the complaints of persistent pain in whole abdomen associated with fever, vomiting and constipation for 3 days. Patient's mother gave a history of bleeding per vagina and suspected leech bite 5 days back, but she was confused whether leech entered inside the vagina or not. Clinically it was a case of acute intestinal obstruction. Plain radiography and ultrasonography of whole abdomen revealed intestinal obstruction. Emergency laparotomy was done and a dead leech measuring 3 inches in length in stretched condition was found in the left iliac fossa which was attached from the mid ileum to the descending colon causing band effect. No perforation or gangrene was found in the intestine or any collection in the peritoneal cavity. No other port of entry could be detected on external or internal surface. Post operative recovery was uneventful. The patient was discharged from the hospital on the 10th post operative day. Route of entry of a leech in the peritoneal cavity through genital tract is a rarity and presentation as acute intestinal obstruction yet not reported.

Key words

Leech bite, Peritoneal cavity, Intestinal obstruction.

Introduction

The common causes of acute intestinal obstruction in children are:

- ❖ Congenital (Atresia, HPD, ARM etc.)
- ❖ Helminthiasis
- ❖ Postoperative bands and adhesions
- ❖ Burst appendix
- ❖ Intussusception
- ❖ Tuberculosis
- ❖ Trauma
- ❖ Tumour

The specific symptoms of acute abdomen always may not be expressed by children properly. Leech bite is common in the rural areas of Bangladesh in rainy season (Ashar & Srabon). Leech bite is commonly found in the external body surfaces. Leech bite in nose, pharynx, larynx, oesophagus, genitalia, urethra and rectum are also reported¹. Vaginal bleeding in children as the result of a leech bite is very rare and there are only three case reports available in the Medline Indexed literature². The entry of a leech into the peritoneal cavity through the genital tract is a rare incident and acute intestinal obstruction caused by leech is still not reported.

Case report

A 3 years-old girl hailing from Nobigonj, Hobigonj was admitted in paediatric ward with a history of persistent abdominal pain, vomiting & constipation for 3 days. She first

went to the nearest primary health care centre from where she was referred to the paediatric surgery department of SOMCH after 72 hours.

The patient's mother gave the history of vaginal bleeding following a bath in a pond and a suspected leech bite 5 days back as it was common in their area. There was neither history of trauma nor was there any evidence of abuse.



Figure 1: The patient on operation table

At the time of admission in paediatric ward, there was no active bleeding from vagina or any foreign body within it. Her physical examination was carried out & the clinical diagnosis was acute intestinal obstruction.

Routine blood examination (Hb%-10.5 gm/dl), serum electrolytes, urine R/M/E & CXR were normal. Diagnosis of acute intestinal obstruction was made by plain radiography of abdomen in erect posture and ultrasonography of whole abdomen.

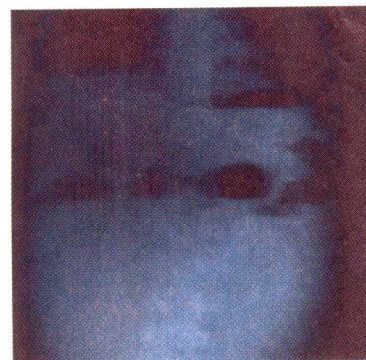


Figure 2: Plain X-ray showing features of intestinal obstruction

Laparotomy was done under general endotracheal anaesthesia through a supraumbilical transverse incision on the 6th day of incident.

There was no haemorrhagic fluid or exudate found in the peritoneal cavity but the small gut was distended and a band like structure was found between a loop of ileum & the descending colon.

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Figure 3: Per operative appearance of the gut where leech was attached

Later the band was identified as a dead leech about 3 inches in length, which was attached by its two ends. The sites of the gut where leech was attached were red in appearance and oedematous but there was no ulceration or perforation.

No other port of entry of the leech was found on external or internal surfaces of the abdomen. Abdomen was closed in layers without keeping any drain.

Naked eye examination confirmed the band like structure as a leech which was about 3 inches in length and was preserved in a formalin containing bottle.



Figure 4: Dead leech 3 inches in length

The postoperative recovery was uneventful and the patient was discharged on 10th POD. There was no complaint when she came back for follow up after 2 weeks of discharge.

Discussion

Leeches are invertebrates of Phylum Annelida and class Hirudinea. A leech is usually about 12.5-15.25 cm long.

Leeches are classified according to the different ways they feed³ such as:

- a) Jawed leeches or Gnatobdellida
- b) Jawless leeches or Rhyncobdellida
- c) Worm leeches or Pharyngobdellida

Leeches can be classified according to their habitat:

- a) Freshwater leeches

b) Terrestrial leeches

c) Marine leeches

The bodies of all leeches are divided into the same number of segments (34), with a powerful clinging sucker at each end-front sucker & rear sucker⁴. Leeches usually have three jaws and make a Y-shaped incision. The Australian land leeches have only two jaws and makes a V-shaped incision.

The prolonged bleeding after a leech bite is due to the action of factors in the leech saliva left in the bite⁵, which include-

- ❖ Histamine-like vasodilator.
- ❖ Hirudin (a potent antithrombin).
- ❖ Hyaluronidase.
- ❖ Calin (a platelet aggregation inhibitor).

Bleeding from a leech bite wound can persist for a mean of 10 hours and as long as 7 days. All leech species are carnivorous⁶. Some are predatory, feeding on a variety of invertebrates such as worms, snails, insect larvae, crustaceans, while a very few are haemophagic parasitic blood-sucking leeches, feeding on blood of vertebrates such as amphibians, waterfowl, fish & mammals.

Given the opportunity they will also feed on human blood. The most important predators on leeches are fish, aquatic insects, crayfish and other leeches specialized for predation on leeches.

Haemophagic leeches attach to their hosts and remain there until they become full at which point they fall off to digest.

When a jawed leech bites it holds the sucker in place by making its body rigid⁷. Using its semicircular and many toothed jaws like minute saws, it then makes an incision in the skin and excretes a mucus. This helps the sucker to adhere and anaesthetize the host. A salivary secretion containing the anti coagulant and histamine floods the wound and the leech relaxes its body to allow the blood to be ingested. This mixture allows the blood to flow and prevents clotting once inside the leech.

Conclusion

Entrance of a leech into the peritoneal cavity through a female genital tract of a young girl is possible specially when bathing in a pond or a river. A leech in the peritoneal cavity can be attached to the adjacent loops of intestine and may cause acute intestinal obstruction. Leech infestation is common in rural areas of Bangladesh specially in the rainy season and the children getting substandard sanitary facilities are at high risk for leech bites in the genital regions; a high index of suspicion is of great help to make an early diagnosis and ensure prompt treatment.

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Medical Services Department (MSD) of ORION Laboratories Limited successfully arranged significant number of Scientific Seminars, Round Table Meeting and Intern Doctors Reception Program in different venues all over Bangladesh during September to December, 2006.

Scientific Seminars

BMA Bhavan, Chittagong

Bangladesh Medical Association of Chittagong arranged a scientific seminar on "Depression a global burden" at BMA Bhavan, Chittagong on 4th August 2006. Prof. Md. Abdul Mottaleb, Head of dept. Psychiatry chaired the session. Dr. Mohiuddin A. Sikder, MO was the key note speaker. More than 250 doctors attended the seminar.



DNMCH, Dhaka

A scientific seminar was arranged by Dhaka National Medical College and Hospital (DNMCH), Dhaka on "Ramadan and Health" at the seminar room of DNMCH on 14th September 2006. Dr. A. K. M. Alamgir, Prof. Dept. of Community Medicine chaired and presented the key note at the seminar. All the doctors of DNMCH were present at the seminar.



Round Table Meeting

Dhaka

Casualty ward-31, DMCH

Casualty block-II of surgery Unit, DMCH arranged a round table meeting on "Sterile Precautions & Theatre Safety" at clinical conference room on 14th August 2006. The session was chaired by Prof. M. A. Hashem Bhuiya, Dept. of Surgery DMCH. Dr. Md. Samiul Islam, HMO was the key note speaker. About 50 doctors attended the meeting.



Medicine unit-II, DMCH

On 19th October 2006 Medicine unit-II, DMCH arranged a round table meeting on "Management of Meningitis" at conference room. Dr. Sahidur Rahman, Asst. Registrar was the key note speaker. About 20 doctors attended the meeting.

Gynae dept. BMCH

A round table meeting on "Role of ceftriaxone in gynaecological infections" was arranged by Gynae dept. BMCH at the conference room on 17th October 2006. Dr. Surajya Begum, Assistant Prof. Dept. of Obs & Gynae chaired the session. Dr. Farzana Akhter Bhuiyan (Lip) Asst. Register was the key note speaker. About 30 doctors attended the meeting.



Khilgaon, Dhaka

GP doctors of Madartech, Khilgaon arranged a round table meeting on "Medical management of ischemic heart disease" at Chinapark Chinese restaurant, Khilgaon on 18th October 2006. Prof. Shah Mohammad Keramat Ali, Prof. Clinical Nutrition, Institute of Nutrition and Food Science, University of Dhaka chaired the session. Dr. Md. Toufiqur Rahman (Cardiologist), NICVD, Dhaka was the key note speaker. About 50 doctors attended the meeting.



Burn and Plastic Surgery unit, DMCH

A round table meeting on "Role of Amino Acid for burn patients" was arranged by Burn and Plastic Surgery unit, DMCH at China Kitchen Chinese restaurant on 11th September 2006. Prof. Dr. Syed Shamsuddin Ahmed chaired the session. About 20 doctors attended the meeting.



Surgery unit-I, DMCH

On 13th September 2006 Casualty Surgery unit-I, DMCH arranged a round table meeting on "Fluid and electrolyte imbalance in surgical practice" at casualty classroom. Prof. Dr. M. A. Hashem Bhuiya, Associate Prof. chaired the meeting. Dr. M. A. Kawsar, HMO was the key note speaker. About 60 doctors attended the session.



Khulna

Medicine unit-I, KMCH

Medicine unit-I, KMCH arranged a round table meeting on "Management of hypertension" at indoor, Medicine unit-I on 13th August 2006. Dr. Shahidul Islam, Assistant Registrar chaired the session and was the key note speaker. About 20 doctors attended the meeting.

Medicine unit-II, KMCH

A round table meeting on "Indapamide as a 1st line treatment therapy for hypertension" was arranged by Medicine unit-II, KMCH at the indoor on 12th August 2006. Dr. Shahidul Hassan Mollick, Assistant Registrar of that unit was the key note speaker. About 20 doctors attended the session.



Khalishpur clinic, Khulna

On 13th August, 2006 a round table meeting on "Role of ceftriaxone in surgery" was arranged at Khalishpur clinic, Khulna. Dr. Kazi Mujahidul Islam chaired the meeting and Dr. Ismat Ara Bina was the key note speaker. About 20 doctors attended the meeting.



Mymensingh

Medicine unit-III, MMCH

MMCH, Medicine unit-III, arranged a round table meeting on "Meningitis" at Kings Cross Chinese Restaurant on 22nd August 2006. Dr. I. Harun, Associate Prof. chaired the session. About 50 doctors attended the session.



Dinajpur

Surgery unit, DJMCH

On 14th October 2006, Surgery unit, DJMCH arranged a round table meeting on "Role of ceftriaxone in surgical infections" at Martin Chinese Restaurant, Dinajpur. Dr. Md. Taibur Rahman, Associate Prof. chaired the session. Asst. Prof. Dr. Md. Yusuf Ali & consultant Dr. Samsul Alam Chowdhury were also present on that session. About 40 doctors attended the meeting.



Bogra

Naogaon Sadar Hospital, Naogaon

A round table meeting on "Role of ceftriaxone in treating various infections" was arranged by Naogaon Sadar Hospital at Nursing Training Institute, Naogaon on 17th October 2006. Dr. Md. Shahidullah, Civil Surgeon chaired the meeting. About 40 doctors attended the session.

BDMA, Bogra

On 28th July a round table meeting was arranged on "Highlighting the beneficial effect of Amino Acid" at Hotel Century, Bogra. Md. Mizanur Rahman, President-BDMA chaired the session. About 70 doctors attended the meeting.

THC, Dhamurhat, Naogaon

THC, Dhamurhat, Naogaon arranged a round table meeting on "Highlighting the beneficial effect of Amino Acid" at THC on 25th July 2006. Dr. Solaiman Ali Faruk, THO, Dhamurhat chaired the session. About 20 doctors were present at the meeting.

Rajshahi

Paed unit-II, RMCH

A round table meeting was arranged by Paed unit-II, RMCH on "Role of ceftazidim in paediatric infections" at ward-10, Rajshahi Medical College Hospital on October 12, 2006. Associate Prof. Dr. Md. Asgar Hossain, chaired the session. About 25 doctors attended the meeting.

MU-II, RMCH

On 10th October 2006, MU-II, RMCH arranged a round table on "Role of ceftriaxone in medical infections" at Chirping Chinese Restaurant, Rajshahi. Associate Prof. Dr. Md. Azizul Haque, chaired the session. About 35 doctors attended the meeting.

Neurosurgery unit - RMCH

Neurosurgery unit-RMCH arranged a round table meeting on "Role of ceftriaxone in treating neurological infections" at Chirping Chinese Restaurant, Rajshahi on 9th October 2006. Dr. Lutfor Rahman, Associate Prof. & Head of Dept. chaired the meeting. About 20 doctors present at the session.

The rest of the MSD news at page - 433
www.orion-group.net/journals

Nobel Prize in Physiology or Medicine 2006

This year's Nobel Laureates have discovered a fundamental mechanism for controlling the flow of genetic information. Our genome operates by sending instructions for the manufacture of proteins from DNA in the nucleus of the cell to the protein synthesizing machinery in the cytoplasm. These instructions are conveyed by messenger RNA (mRNA). In 1998, the American scientists Andrew Fire and Craig Mello published their discovery of a mechanism that can degrade mRNA from a specific gene. This mechanism, RNA interference, is activated when RNA molecules occur as double-stranded pairs in the cell. Double-stranded RNA activates biochemical machinery which degrades those mRNA molecules that carry a genetic code identical to that of the double-stranded RNA. When such mRNA molecules disappear, the corresponding gene is silenced and no protein of the encoded type is made. RNA interference occurs in plants, animals, and humans. It is of great importance for the regulation of gene expression, participates in defense against viral infections, and keeps jumping genes under control. RNA interference is already being widely used in basic science as a method to study the function of genes and it may lead to novel therapies in the future.



Andrew Z. Fire Craig C. Mello

nobelprize.org

Breast milk: Key to better mental health in children

Researchers at the Telethon Institute for Child Health Research in Perth have been studying 2500 West Australian children for 16 years and have come up with some remarkable conclusions relating breastfeeding and the mental health of a child. Their research proves that children who are breastfed for more than 6 months from birth have better mental health than children who weren't. This revolutionary study, called the Raine Study, was done by using standard parameters that are used to measure child behavior. The assessment was done at ages 2, 6, 8 and 10. The results were a revelation. Children who have been breastfed for less than 6 months stand a 52% enhanced risk of a mental health issue at age 2, a 55% risk at age 6, 61% at age 8 and 37% at age 10. Other factors such as the social and financial condition of the parents, their education, the family environment and mutual happiness were also taken into consideration while arriving at these results. Hence researchers were of the firm opinion that mothers should be encouraged to breastfeed for a longer time. This should be considered a social and community issue and more impetus should be laid on the benefits of breastfeeding. The mental health issues that a child could face due to lack of mother's milk are persistent bad behavior, aggression and anti-social behavior. The children who are breastfed for less than 6 months seemed more depressed, apprehensive and less social.



www.EarthTimes.org/Health News

Holes in heart may be factor in migraines

One in five adults has a little hole in the heart. Most will never know it. But the defect may play a role in certain strokes and severe migraines, leading thousands to get devices implanted to seal it shut. Everyone is born with a tiny flap-like opening between the heart's two upper chambers. Usually, it grows shut during infancy. But in at least 20 percent of the population, the opening doesn't heal over, a defect called "patent foramen ovale" or PFO. When blood returns to the heart, it's supposed to go to the lungs to pick up more oxygen and be filtered clean. A PFO can allow some blood to seep back into circulation without that filtering step. That could allow small blood clots or other substances into the bloodstream, traveling straight to the brain. Among people who have strokes at a young age 55 or under with no apparent risk factors, up to 60 percent also have a hole in the heart. By some estimates, that could equal 30,000 to 60,000 strokes a year. In the late 1990s, cardiologists started aggressively sealing PFOs in stroke survivors, in hopes of lowering their risk for further strokes. They threaded tiny implants into the heart through a hole in the groin, pulling them against the PFO's flap to seal it shut. Then some implant recipients started reporting an odd side effect: Their migraine headaches went away. Subsequent research suggested at least 40 percent of people who suffer a severe type of migraine, the kind that comes with an "aura" or visual disturbance have fairly large PFOs.



TheTurnTo10.com/Health

Applying make-up everyday can be hazardous for health

Women who apply make-up on a daily basis should think twice before spending those 15 minutes in front of their mirror, as a research conducted in the UK has found that they could be inviting serious health problems. The study discovered that every day the average woman applies 175 different chemicals to her body in the form of cosmetics and toiletries. And out of those 175 cosmetic products, most of them contain a cocktail of different chemicals-many of which have been linked to various health problems. The list of potentially harmful ingredients in everyday cosmetics includes chemicals linked to cancers, hormone problems and skin-irritations. "Some of the chemicals in everyday toiletries may trigger irritant reactions or allergy. Reactions are particularly seen in patients with atopic eczema and those with sensitive skin. Most reactions will be to the face or hands, and sometimes on the arms and legs. Preserving agents called parabens often used in moisturisers and body creams have been linked to breast cancer and also to skin inflammations. Foaming agents such as sodium lauryl sulphate and sodium laureth sulphate used in shampoos are said to be skin irritants. And lastly the disinfectant formaldehyde in shampoos and handsoap can make skin flare up and is linked to asthma and headaches.



www.chemicalsafeskinco.uk

Males will have their own contraceptives?

An experimental male contraceptive drug is being tested on rats by researchers of the international Population Council's Center for Biomedical Research, said a report Tuesday in the journal Nature Medicine. The drug, called Adjudin, which temporarily blocks the development of sperm does not interfere with testosterone levels in men and its effects wears off in 20 weeks. So far, a male contraceptive pill has proved difficult to produce because of a basic biological fact of human reproduction: a man naturally produces about 150 million sperm each day of his adult life. Existing chemical contraceptives for men under development are based on altering the levels of sex hormones circulating in the bloodstream in order to inhibit the natural state of male hyper-fertility. Adjudin nips wannabe sperm cells in the bud. Those cells, called germ cells, ordinarily develop into sperm. But they need the help of other cells, called Sertoli cells, to reach that destiny. Tests on vital organs, such as kidneys, liver, brain, heart, prostate gland and other cells of the testes showed that the drug had no effect, one researcher who pioneered the study, said. In men the drug would have to be taken as an implant rather than an oral pill as it is broken down in the digestive tract. The rats quickly regained their ability to produce normal levels of sperm once the drug had been cleared from their bloodstream. In humans this would be a critical feature if the drug is to be acceptable to the public, he said.



www.Xinhau.com/Health

Curry spice 'help for arthritis'

Extract of a spice used in curry could help prevent rheumatoid arthritis and osteoporosis, US research suggests. Turmeric has been used for centuries in Asian medicine to treat inflammatory disorders and its extract can be found in western dietary supplements. Now lab work by University of Arizona researchers, in Arthritis & Rheumatism, shows just how the spice's curcuminoid extracts have a therapeutic effect. Experts say new drugs may be found, but eating more spices is unlikely to work. The researchers said clinical trials were needed before turmeric supplements could be recommended for medicinal use. Earlier work by the University of Arizona team showed turmeric could prevent joint inflammation in rats. In their latest study, they set out to find exactly what ingredient in turmeric was having the anti-inflammatory effect. They prepared extracts from the rhizome or root of the turmeric plant and compared them against the commercially available products that contain turmeric extracts. A version of turmeric extract that was free of essential oils was found to most closely match the composition of the commercial supplements. And it was this extract, containing curcumin, that was most effective at blocking the onset of rheumatoid arthritis in the rats. The extract appears to work by preventing a protein that controls when genes are switched on or off from being activated in the joint. Once the protein known as NF-KB is activated, it binds to genes and increases the production of inflammatory proteins which attack the joints. Dr Janet Funk and her colleagues believe their findings also suggest turmeric extract could treat other inflammatory disorders, including asthma, multiple sclerosis and inflammatory bowel disease. The extract also blocked a pathway in the body linked to bone loss, suggesting it could treat osteoporosis as well.



www.bbc.com/Health

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Crushing pills 'can prove fatal'

Crushing pills to make them easier to swallow can cause serious side-effects that can sometimes be fatal, experts have warned. The group, including pharmacists and lawyers, says pills often have special coatings that affect how they are released into the body. Crushing them can mean this complex system is disturbed. David Wright, who led the group, said people could often take drugs in patch, liquid or inhaler form instead. It is estimated that 60% of older people have trouble swallowing medication. Previous research has shown 80% of nurses in care homes resort to crushing tablets to help residents take medicines. An estimated 75 million prescriptions a year are associated with adverse drug reactions. Drugs that should not be crushed include the breast cancer drug tamoxifen and morphine. Crushing tamoxifen could result in the person who is breaking up the tablet breathing in medication, which can be particularly dangerous if they are pregnant. Crushing morphine could lead to a fatally fast release of the drug. Nifedipine, the angina and blood pressure drug, can cause dizziness, headaches and an increased risk of stroke or heart attack when crushed up. If these medications are crushed, the drug is released a lot quicker than it is designed to be. The experts say patients and their families are sometimes crushing up pills on the advice of their GP or nurse. The guidance, which was originally commissioned by Rosemont Pharmaceuticals - makers of liquid medicines, warns nurses and GPs that they could be legally liable and charged with negligence if they advise a patient to crush up a pill or open a capsule. David Wright, senior lecturer in pharmacy at the University of East Anglia, told the BBC: "Crushing pills increases the risk of side-effects of the patient getting a large dose of a drug which should be released slowly or a drug being cleared from the body too early before it can do anything. He said doctors needed to check if patients were happy to swallow pills when they first issued prescriptions and at follow-up appointments. "It should always be drawn to health professionals' attention that these "modified release" tablet products must be used in accordance with the instructions provided, otherwise the potential for uncontrolled delivery is present."



www.bbc.com/Health

Low vitamin E linked to asthma

Expectant mums should ensure they get enough vitamin E as low levels during pregnancy increase the risk of asthma in the unborn child, UK experts say. Children of mothers who had the lowest intake were over five times more likely to have asthma than peers whose mothers had the highest vitamin E intakes. Vitamin E has a beneficial effect on the developing lung, the University of Aberdeen researchers believe. The first 16 weeks of pregnancy could be a critical time, researchers say. By 16 weeks after conception the airways are fully developed in the embryo. But lead researcher Dr Graham Devereux said vitamin E most likely had a dual effect - influencing both lung growth and airway inflammation. He and his team studied 2,000 pregnant women and their children over a five-year period. The children whose mothers fell into the lowest fifth for vitamin E intake during pregnancy were more likely to develop wheezing and asthma by their fifth birthday. The children's own nutrient intake at the age of five did not appear to change the researchers' findings, which appear in the American Journal of Respiratory and Critical Care Medicine. Earlier work by the team showed newborn babies of mothers with low vitamin E intakes had greater responses to dust mites and grass pollen. When these children reached two, they were also more likely to wheeze and have eczema than their peers. Dr Devereux stressed: "Pregnant women should not take vitamin E just because of this study. They should eat a balanced, healthy diet. "It is possible that declining intake of vitamin E in the last 50 years may have contributed to the increase in asthma in children," he said. Currently, 1.1m children have asthma and it is the most common long-term condition among children in the UK. Dr Lyn Smurthwaite of Asthma UK said: "Eating a healthy, balanced diet at any time, but especially during pregnancy, makes sense and this study suggests simple modifications in a pregnant mother's diet may help protect her child from developing asthma by the age of five. Dr Keith Prowse, chairman of the British Lung Foundation, said: "This is an important piece of research which indicates that maternal diet may be more important in childhood asthma than previously thought. "Good nutrition plays an important role in fighting infection, including respiratory infections which can often trigger asthma. "Eating healthily is especially important for pregnant women, including taking the daily recommended intake of vitamin E. "We'd like to see more research into the full role of maternal dietary factors in relation to childhood asthma." Foods rich in vitamin E include vegetable oils, margarine, nuts and sunflower seeds.



Vitamin E is found in margarines

www.bbc.com/Health

Mornings 'best time for surgery'

Mornings are the best time to have an operation, according to research which shows more complications occur when surgery is performed in the afternoon. A US team at Duke University analysed the outcomes of over 90,000 operations carried out at their hospital. Adverse events were most common when surgery started between 3pm and 4pm and least common with 9am-noon operations. The authors say natural changes in the body's pain levels during the day and staff fatigue could be involved. Lead researcher Dr Melanie Wright said: "Healthcare is a 24 hours-a day business and it is not unexpected that factors such as fatigue, circadian rhythms, personnel shift changes and scheduling may affect patient care over the course of a day." Very few of the adverse events Dr Wright's team identified caused lasting harm to the patients. Most were related to problems with pain management and postoperative nausea and vomiting. Other problems included prolonged sedation, wound infection, dangerous changes in blood pressure and operating room equipment problems. For example, patients may be more susceptible to pain or postoperative nausea and vomiting in the late afternoon. Issues such as not having eaten all day or spending a stressful day waiting to have the surgery might also be important. Late afternoon is also a time when the anaesthetic teams in the hospital changed shifts and when the body's has a dip in its natural circadian rhythm, which regulates sleep, brain wave activity and other bodily functions. The researchers are planning another study to compare each step in the delivery of care for patients having surgery during two time periods - 9am to noon and 3pm to 6pm. If other studies corroborate the findings, the factors causing the difference would also need to be identified, he said. "But it is interesting. It perhaps does mean that we should caution against suggesting that we go to round-the-clock operating to get better use of operating theatres."



Journal Quality and Safety in Healthcare.

Don't go to bed lonely

The old adage "Don't go to bed angry" has a kernel of truth behind it. Anger isn't something you can sleep off - the stress of an argument or a bad day actually stays in your body, researchers suggest. When older adults go to bed feeling lonely, sad or overwhelmed, they wake up with elevated levels of the stress hormone cortisol in the blood, according to a study published today in the Proceedings of the National Academy of Sciences. This is the first study to document how day-to-day experiences can affect stress hormone levels in the brain. Experience influences stress hormones, and stress hormones influence experience, the study's findings suggest. Scientists already believe that chronically high cortisol levels can cause certain physical or emotional illnesses. Now it seems that high cortisol levels on one day just carry over to the next day. Scientists looked at 156 older adults - between the ages of 54 and 71 - to see whether cortisol levels during a single day reflected feelings from the night before or if those hormone levels would affect a day's behavior. Over three days, volunteers gave small saliva samples three times a day and described their feelings every night in a diary. Adults who reported feeling lonely at night were more likely to have higher cortisol levels the next morning, meaning that a few hours' rest did not wash away any stress. But the study's authors suggest a little extra stress hormone isn't necessarily a bad thing. That stress could prepare our bodies for the day ahead. "Elevated levels of cortisol actually cue the body that it is time to rev up to deal with loneliness and other negative experiences," says lead study author Emma Adam, assistant professor of education and social policy and a faculty fellow at the Institute for Policy Research at Northwestern University.



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Zinc supplements reduce the severity and duration of diarrhoea

Introduction

Every year approximately 2.2 million children die as a result of diarrhea and dehydration. In the majority of cases, this is preventable through exclusive breastfeeding, improved hygiene and sanitation and access to clean water, yet diarrhea is still one of the leading causes of death among children under five.

In May 2004, WHO/UNICEF issued a joint statement recommending the use of zinc, an essential micronutrient for human growth, development and maintenance of the immune system, and a new formulation oral rehydration solution (ORS), with reduced levels of glucose and salt, as a two-pronged approach to improved case management of acute diarrhea in children. WHO and UNICEF recommend 20 mg of zinc per day for 10-14 days for infants and children, 10 mg for infants under six months of age.

HOW ZINC AFFECTS IMMUNE FUNCTION

- Zinc is a structural component of thymic hormone
- Zinc is a lymphocyte mitogen (causes expansion of immune cells)
- Zinc regulates immune function

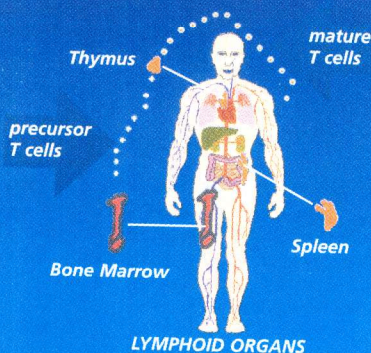


Fig: Zinc enhanced immune function

For more than 20 years researchers have been assessing the benefit of zinc supplementation during diarrhea episodes. Studies have shown that zinc supplementation results in a 25% reduction in duration of acute diarrhea and 40% reduction in treatment failure or death in persistent diarrhea. These studies also revealed that children receiving zinc experience a decrease in the severity of their diarrhea episodes. A ten day course has proven to provide a prophylactic protection against future bouts of diarrhea for two to three months after the episode.

The combined recommendation of zinc and ORS is a safe, effective and inexpensive diarrhea treatment for children in the developing world. The only known side effect of zinc use is vomiting, which is rarely reported and is typically attributed to a metallic taste in the zinc.

Bangladesh Perspective

Zinc deficiency is highly prevalent in children in developing countries. Inadequacy of dietary zinc intake is exacerbated by the net loss of zinc during diarrhea. Zinc supplements given during diarrhea reduce the duration and severity of treated episodes and, if given for 14 days during and after diarrhea, can reduce the incidence of diarrhea and acute lower respiratory infection in the subsequent two to three months. Provision of zinc during diarrhea may thus be a feasible strategy for both treatment of diarrhea and prevention of subsequent morbidity and mortality. Researchers in rural Bangladesh found that zinc treatment significantly reduced the incidence of diarrhea and acute lower respiratory infection, admissions to hospital. Zinc treatment is a simple and inexpensive intervention that can be used within existing diarrhoeal disease control efforts.

One of the study was conducted at Matlab field site of International Centre for Diarrhoeal Disease Research, Bangladesh where 8,070 children aged 3-59 months contributed 11,881 child years of observation during a two year period.

Children with diarrhea were treated with zinc (20 mg per day for 14 days). About 40% of diarrhoeal episodes were treated with zinc in the first four months of the trial; the rate rose to 67% in the 5th month and to 80% by the 7th month and was sustained at that level.

In the study population, children who received zinc supplementation during and after diarrhea had a shorter duration of diarrhea, and a lower incidence of diarrhea. Incidence of acute lower respiratory infection was reduced and there was a trend suggesting fewer diarrhea related hospital admissions. The rate of non-injury deaths was also considerably lower.

Recommendation

Twelve studies examined the impact of zinc supplements on the management of acute diarrhea. Eleven of these showed a reduction in the duration of the diarrhoeal episode; in eight of these, the reduction was statistically significant. Five of the above studies also collected data on stool volume or frequency, and found that zinc supplements reduced stool output or frequency. The data shows that zinc supplementation during and until cessation of diarrhea (either syrup containing 20 mg of elemental zinc per 5 ml, or tablets of 20 mg zinc such as zinc sulphate, gluconate or acetate) has a significant and beneficial impact on the clinical course of acute diarrhea, reducing both its duration and severity.

Recent studies suggest that a 10-14 days therapy of zinc treatment can considerably reduce the duration and severity of diarrhoeal episodes, decrease stool output, and lessen the need for hospitalization. Zinc may also prevent future diarrhea episodes for up to three months. Other studies evaluating the effect of zinc supplementation on diarrhoeal diseases found a preventive and long-lasting impact. These studies show that 10 mg to 20 mg of zinc per day for 10-14 days reduced the number of episodes of diarrhea in the 2-3 months after the supplementation regimen.

WHO and UNICEF therefore recommend daily 20 mg zinc supplements for 10-14 days for children with acute diarrhea, and 10 mg per day for infants under six months old, to curtail the severity of the episode and prevent further occurrences in the ensuing 2-3 months.

Conclusion

Several recent controlled trials have shown a preventive effect of routine zinc supplementation on the incidence of diarrhea and acute lower respiratory infection. However, these studies suggested daily zinc supplementation for a period of 6-12 months. The lower rates of diarrhea and acute lower respiratory infection in different studies indicate that a reduction in incidence could be due to a systemic effect of zinc, probably through enhanced immune function. The reduction in hospital admissions for diarrhea could have been due to effects of zinc on episode duration, reduced incidence, or altered care seeking behaviour. A recent study from Bangladesh reported a higher prevalence of acute lower respiratory infection in Bangladeshi children in a six month follow up period after receipt of 20 mg elemental zinc daily for 14 days. The prevalence of acute lower respiratory infection was; however, lower in children who received a 200000 IU vitamin A capsule after 14 days of zinc supplementation.

The lower rates of child morbidity and mortality with zinc treatment represent substantial benefits from a simple and inexpensive intervention that can be incorporated in existing efforts to control diarrhoeal disease.

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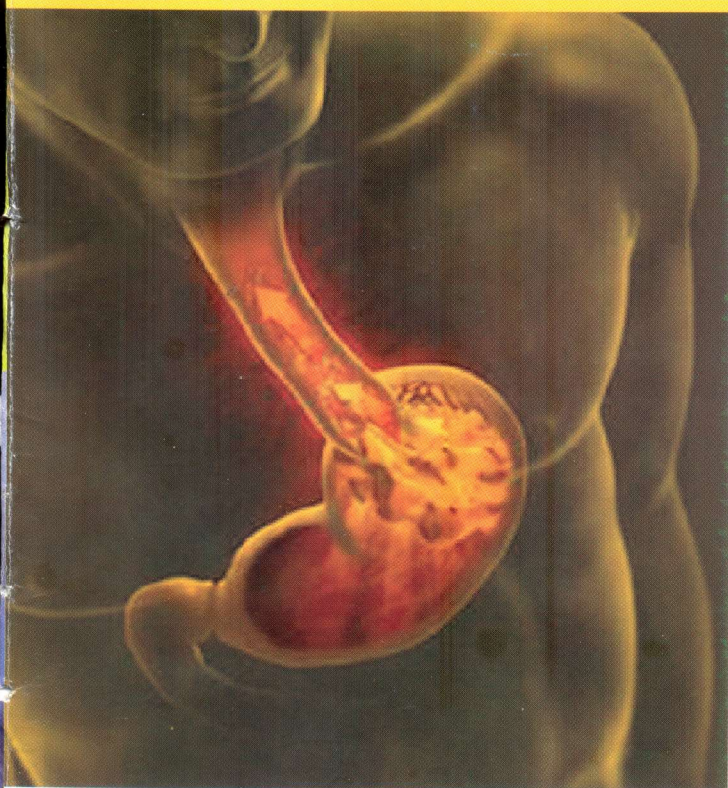
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