PMDC No. IP0042
ISSN (Online) 2309-592X
ISSN (Print) 2309-3080
Volume 11, Issue 2, April-June. 2015

Esculapio

Journal of Services Institute of Medical Sciences, Lahore.

Effects of Aspartame on Relative Tissue Weight Index and Venous Drainage in Mice Liver

Perceptions of Medical Students about Educational Environment at Services Institute of Medical Sciences, Lahore

Health Need Status: An Assessment of Community Health Status, Needs and Services

Outcome of Subacromial Steroid Injection in Management of Shoulder Impingement Syndrome

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ESCULAPIO

JOURNAL OF SERVICES INSTITUTE OF MEDICAL SCIENCES, LAHORE.

VOLUME. 11 APRIL - JUNE 2015 ISSUE. 02

PUBLISHED BY

SERVICES INSTITUTE OF MEDICAL SCIENCES, LAHORE.

ONLINE EDITION

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Review Article

THYROID DISEASE IN PREGNANCY

Shabnam Sibtain, Tayyiba Wasim, Wasim Amer and Nadeem Aziz

Objective: Aim of the review is to determine the effect of thyroid dysfunction on the course of pregnancy.

Material and Methods: Medline, Embase (from 2000 to 2011) and research articles. There was no language restriction for any of these searches. Studies included were randomized clinical trials, cohort and case control studies.

Results: There are few prospective population based cohort studies which study the effect of thyroid dysfunction on fetal development. There was a prospective population based cohort study in china. 1017 women with singleton pregnancy participated in this study. The study showed that clinical hypothyroidism was associated with increased fetal loss, low birth weight, and congenital malformations. The sub clinical hypothyroidism was associated with increased fetal distress, preterm delivery, poor vision development, and neurodevelopment delay. The clinical hyperthyroidism was associated with hearing dysplasia. A systemic review and meta-analysis found a strong association between clinical hypothyroidism and preeclampsia, perinatal mortality and lower IQ in the child. They also found an association between thyroid autoimmunity and unexplained subfertlity, miscarriages, recurrent miscarriages and preterm birth.

Conclusion: The management of thyroid disease in pregnancy is important as thyroid function undergo changes which can adversely affect pregnancy and the fetus.

Keywords: pregnancy, thyroid, fetus.

Introduction

Thyroid disorders are common endocrine problems in pregnancy. The incidence of thyroid disease is common in reproductive age therefore it need to be recognized and treated. The thyroid in pregnancy undergo metabolic, immunological and haematological changes. Thyroid dysfunction if not treated has adverse affect on both the mother and the fetus.

Search Strategy

MEDLINE, EMBASE (from 2000 to 2011) and research articles. There was no language restriction for any of these searches. Studies included were randomized clinical trials, cohort and case control studies.

Results

There are few prospective population based cohort studies which study the effect of thyroid dysfunction on fetal development. There was a prospective population based cohort study in china. 1017 women with singleton pregnancy participated in this study. The study showed that clinical hypothyroidism was associated with increased fetal loss, low birth weight, and congenital malformations. The sub clinical hypothyroidism was associated with increased fetal distress, preterm delivery, poor vision development, and neurodevelopment delay .The clinical hyperthyroidism was associated with hearing dysplasia.[1] A systemic review and meta-analysis found a strong association between clinical hypothyroidism and preeclampsia, perinatal mortality and lower IQ in the child. They also found an association between thyroid autoimmunity and unexplained subfertlity, miscarriages, recurrent miscarriages and preterm birth.[2] Another study showed that thyroid dysfunction may predispose to late pre eclampsia. In 102 singleton pregnancies that developed late pre eclampsia had mean arterial pressure (MAP), uterine artery pulsatility index (PI) maternal serum thyroid stimulating hormone (TSH), free thyroxine (FT4) and free triiodothyronine (FT3) measured at 11 to 13 weeks of gestation. These values were compared with values of normal 4318 pregnancies.[3] This study showed that maternal TSH can be helpful in prediction of late pre eclampsia , in combination with maternal history, measurement of MAP and uterine artery PI.

In a population based cohort study in Netherlands, 3659 children with their mothers were included. The result showed that an increase in FT 4 predicated a

Low risk of expressive language delay at 30 months. However low thyroxine level was associated with higher risk of expressive language delay at all ages.[4]

In a prospective cohort study in 8 women in early pregnancy with sub clinical hypothyroidism and 8 women with euthyroid serum sampling of thyrotropin thyroglobuln, thyroxine, triiodothronine, free thyroxine, free triiodothronine oestradiol, progesterone , human chorionic gonadotropin and prolactin were done weekly from 5 to 12 weeks of gestation . Women with sub clinical hypothyroidism were treated with thyroxine (50 microgram daily) until 12 weeks of gestation. The thyroid function in sub clinical hypothyroidism followed similar changes to euthyroid

Therefore it was less likely to cause higher miscarriage rate as observed in sub clinical hypothyroidism.[5]

A retrospective study of 5 years in women undergoing artificial reproduction showed that in euthyroid women the pregnancy and delivery rates were not affected by presence of antibodies. . However those women with antibodies positive who failed to become pregnant or miscarried showed higher level of TSH.[6]

In a prospective follow up study of 1058 Dutch Caucasian of healthy pregnant women during the three trimesters, were followed up from 12 weeks of gestation to term. The study showed women who had breech presentation had higher level of TSH as compared to those with cephalic presentation at 36 weeks .[7]In another prospective cohort in 141 women with singleton breech > =35 weeks concluded higher TSH level increases the risk of failure of external cephalic version.[8]

Iodine is essential for normal fetal development and its deficiency is common in Western Europe .In a study of 110 women in northern part of Paris revealed iodine deficiency did not correlate significantly with maternal thyroid parameters but affected the fetal thyroid gland. [9] In a study of 114 French pregnant women who had insufficient iodine intake had hypothroxinemia in the third trimester.[10]

Iodine status was assessed in 330 pregnant women in Nice in the third trimester. This study showed that this population had iodine deficiency.[11] In another study, iodine status was studied in pregnant women residing in effective iodization salt programme area. The study concluded that though iodine was adequate in this population but iodine deficiency still existed in some.[12]A cross sectional voluntary screening in a maternity unit of teaching hospital in Turkey involving 70 mothers with their full term neonates found iodine deficiency inspite of salt iodization programme.[13] Similarly Aran Valley in Spain has a longstanding history of iodine deficiency affecting the pregnant women as well .[14].Another study was conducted in Isfahan in Iran after 8 years of iodized salt. No iodine deficiency was seen in Isfahani pregnant women. Thyroid size also did not increase in pregnancy.[15] In a cross sectional observational study of 150 pregnant women in Toronto, Ontario and Canada found lower rate of iodine deficiency compared to previously reported which may be due to universal salt iodization in Canada.[16]

There have been many studies regarding the assessment of thyroid function in pregnancy. In Australia serum sample was collected from 2159 pregnant women at 9-13 weeks of gestation. The result showed that reference interval of TSH in the first trimester of pregnancy differed from non pregnant women. They found out that they were missing 20.5 % of cases by using the general laboratory range for the pregnant women.[17] Similarly another study showed that reference interval in second trimester was different from nonpregnant level.[18] Another study in Japan on 522 pregnant and puerperal women concluded maternal thyroid function especially TSH and free T4 changed during pregnancy .[19] Fetal thyroid gland monitoring done by skilled ultrasonographer can be a good diagnostic tool has been concluded in different studies.[20-22]

Discussion

The management of thyroid disease in pregnancy is important as thyroid function undergo changes which can adversely affect pregnancy and the fetus. In pregnancy thyroid hormone demand is increased which may worsen the thyroid disorder which was unnoticed before. Few weeks after conception serum thyroid binding globulin increases to 2 to 3 fold. This lead to increase in thyroid hormone 1.5 times greater then pre-pregnancy. In woman with pre existing thyroid dysfunction, thyroid function should be normalized prior to conception. In the early pregnancy, fetal thyroxine is taken from the mother, the fetal thyroid starts functioning in the second trimester but the reserves of the fetal gland are low, thus maternal thyroid hormones contribute to total fetal thyroid hormone concentrations until birth.

Thyroid stimulating hormone (TSH) produced by the pituitary gland is responsible for regulating the release of thyroid hormone in the body. If there is a thyroid dysfunction it may result in less or excess production of TSH. In general population a TSH level between 0.45 and 4.5 mIU/l is considered normal and

indicates euthyroidism. However the normal TSH level in pregnancy is lower and 2.5 mIU/l is considered as the upper range cut off.[23] Studies have shown that the risk for miscarriage and preterm delivery were increased when the level was higher .The presence of thyroid antibodies may further complicate this situation. Women with positive antibodies are at a 2-fold increased risk for miscarriage .Studies have shown antithyroid antibodies are prevalent in the first two trimesters of pregnancy.[24]

Iodine is in the important components of two hormones of T4 and T3 produced by the thyroid glands necessary for normal growth and development. The serum T4 and T3 decrease in the second and third trimester. This decrease is further noticeable when iodine in maternal diet is deficient. The iodine deficiency in fetus causes mental retardation in the child.[25] If iodine supplementation is provided on time mental retardation can be prevented.[26,27] In order for pregnant women to produce enough thyroid hormones to meet her as well as the fetus requirements, a 50% increase in iodine intake is recommended. There is clear evidence that severe iodine deficiency in pregnancy impairs brain development in the child. However, only two intervention trials have assessed neurodevelopment in children of moderately iodine deficient mothers and concluded neurodevelopment improved in children of mothers supplemented with iodine earlier rather than late in pregnancy; both studies were not randomised and were uncontrolled.[26] Iodine deficiency is still a problem in many areas. Therefore these areas should be monitored and supplements provided accordingly.

The early recognization of thyroid disease in pregnancy and appropriate treatment would improve the maternal and fetal outcome. The care of pregnant woman with thyroid dysfunction requires coordination with several healthcare professionals. Hypothyroidism is common in pregnancy compared to hyperthyroidism. The presentation of hypothyroidism may be difficult to differentiate from symptoms of pregnancy. Multiple studies has confirmed the risks of complications such as miscarriages, pre eclampsia, anaemia abruption and postpartum haemorrhage in pregnant women with thyroid disease.[26,28] The fetus may have preterm delivery low birth weight and neonatal respiratory distress.[29] A three-fold risk of placental abruption and a two-fold risk of pre-term delivery were reported in mothers with sub clinical hypothyroidism.[30] Both types of thyroid dysfunction may lead to detrimental complications in mother and child and therefore timely recognition and treatment is essential.

There are many areas of agreement and controversies in literature. The agreements are such as on the reference range of thyroid function in pregnant women and proper interpretation of abnormalities .Those on thyroxine requiring increase in the dose in pregnancy. The drug given in the first trimester with Graves hyperthyroidism is only Propylthiouracil and then carbimazole. Iodine supplementation in case of iodine deficiency for proper neuro development. The areas of controversy are screening of thyroid function in early pregnancy in all the pregnant women and what tests are appropriate. There are no adequate studies to support universal screening in pregnant women. Universal screening in all pregnant women can only be justified when there is evidence of beneficial outcomes from randomised controlled trials.

Conclusion

The management of thyroid disease in pregnancy is important as thyroid function undergo changes which can adversely affect pregnancy and the fetus.

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Original Article

Effects of Aspartame on Relative Tissue Weight Index and Venous Drainage in Mice Liver

Shakeela Nazir, Naila Tawakal, Nazia Siddique and Nahid Tawakal

Objective: To see the effects of aspartame during 9 weeks with 100,250 & 500 mg/kg/body weight dose of aspartame on:
1. liver weight index in Albino mice.
2. Sinusoids, central& portal veins in mice liver.

Material and Methods: It is an experimental study, which was placed in Anatomy Department of Post Graduate Medical Institute, Lahore. 44 Albino mice were divided equally in four groups A, B, C and D (11 animals each).Group A was the control group. Groups B, C & D were experimental groups &given aspartame in a dose of 500 mg/ kg/ b.w for 3, 6 and 9 weeks respectively. Aspartame was given orally by gavage method.

Results: Aspartame reduced body weight, provoked statistical significant increase in liver weight index with increased dose.Congestion and dilation was observed in sinusoids, portal and hepatic veins with increased dose.

Conclusion: Although aspartame is used for weight loss but its excessive use may lead to hepatic damage.

Keywords: Aspartame, liver and congestion.

Introduction

Aspartame is the second most commonly used synthetic sweetener of low caloric value (4 kilocaloric/gram) with sweetening power 180-200 times greater than that of sucrose or table sugar (Portela GS et al., 2007). It is used in nearly 500 pharmaceutical products like sugar-free cough syrups, multivitamins, and 6000 food products including diet soft drinks, yogurt, candies, desserts, chewing gums, ice-creams and as a table top sweetener(Portela GS et al., 2007, Soffritti M et al., 2007). Aspartame Information Center estimated that more than 200 million people worldwide consumed aspartame and its consumption is increasing day by day (Soffritti M et al., 2006).

Material and Methods

44 Albino mice of both sex 5-8 weeks old, weighing from 18-32 grams were procured from animal house of Veterinary Research Institute (VRI), Lahore. All the animals were examined thoroughly before the commencement of the experiment. Mice were housed in iron cages in animal house of Post Graduate Medical Institute, Lahore, under controlled conditions of temperature (25 ± 1 degree centigrade), humidity (70%) and light and dark cycles of 12 hours (Mustafa et al., 2002); they were fed on standard mouse diet and fresh tap water ad libitum.

After acclimatization of one week, weight of each animal was taken before the commencement of experiment. 44 mice were randomly distributed into 4 groups A, B, C and D, each comprised of 11 animals. Animals were placed in their respective cages which were labeled by tags.

Aspartame ofSearle Pharmaceutical Company was used in this research in powder form. Aspartame solution was prepared by dissolving aspartame in distilled water. The dose of aspartame was calculated on individual basis for each mice according to the body weight.

The oral recommended human therapeutic dose (HTD) of Aspartame is 20 mg/kg/body wt. Oral Acceptable Daily Intake (ADI) of Aspartame is 40-50 mg/kg/body wt and LD-50 is 4-5 g/kg/wt. Now due to five times increased metabolic rate in albino mice, the dose calculated was 100 (HTD X 5), 250 (ADI X 5) and 500 mg/kg/body weight (Abhilash et al., 2011). All experimental animals were given aspartame solution, through oral route, as 100, 250 and 500mg /kg/ body wt once daily for 9 weeks. Control animals were given same amount of distilled water through oral route by gavage method.

During experimental period, all the animals were weighedon weekly basis and before sacrificing. Animals were sacrificed at the end of 9 weeks, 24 hours after administering the last dose of aspartame.

Animals were sacrificed by anesthetizing them with chloroform. Animals were dissected, liver was removed and weighed. Following parameters were measured.

Gross Parameters

1) Body Weight:

Body weight of each animal was taken at the start and at the end of experiment and also weekly in the morning before giving the feed.

2) Liver Weight:

Liver weight of each animal was recorded immediately after dissection from body.

3) Weight gain%:

Weight gain % was calculated from the following formula:

$$\frac{\text{Mean wt. at the end of experiment (gm)} - \text{Mean wt. at the start of experiment (gm)}}{\text{Mean wt. at start of experiment (gm)}} \times 100$$

4) Relative Tissue Weight Index (RTWI):

RTWI was calculated from the following formula:

$$\text{RTWI} = \frac{\text{Mean liver wt (gm)}}{\text{Mean body wt (gm)}} \times 100$$

Histological Qualitative Parameters:

Fixed livers sagittal sections were cut. Tissue blocks from each lobe of the liver were made. Tissue processing including dehydration, clearing, infiltration and embedding was done according to Spencer and Bancroft, 2011.

By using rotary microtome, 4-5µm sections were obtained and stained with standard procedures of haematoxylin and eosin (Ross and Pawlina 2005). Stained sections of liver were studied under the light microscope by using 10, 20 and 40 X magnifications for histological changes. Comparison was made between control and experimental groups regarding following histological parameters.

1. Sinusoidal congestion
2. Portal triad congestion
3. Central vein congestion

Statistical analysis:

The data was entered and analyzed using SPSS 17.0 (Statistical Package for Social Sciences). Body weight of adult mice before and after dissection (g), liver weight and relative tissue weight index were described by mean ± S.D. One way ANOVA was applied to observe mean differences between and within groups. The difference was regarded statistically significant if P value was <0.05.The qualitative data was analyzed statistically by Pearson's Chi square test.

Results

Weight gain %:

Animals in control group A showed a continuous statistically significant gain in body weight. While those in experimental groups (B, C & D) showed negative growth rate in body weight with increasing dose of aspartame **(Figure 1)**.

Decrease in weight gain %age in animals of groups C and D treated for 9 weeks give statistically significant results($p<0.05$) with mean values of 48.16±13 and 45.9±30.8 respectively when compared with control group 74.92±18.4 **(Table 1)**. While animals of group B treated with lowest dose give decrease in weight but statistically insignificant results ($p>0.05$) with mean values of 64.42±23.23 when compared with control groups. It showed that with increased dose of aspartame, animalbody weight was decreased.

Table-1: Comparison of the mean values of changes in the body weight of Albino mice after oral administration of 100, &500mg/kg of aspartame for 9 weeks.

Duration of study	Animal wight	A control	B 100mg/kg	C 250mg/kg	D 500mg/kg
9 weeks	At start (gm)	20.45±1.52	22±4.6	23.27±2.05	21±4.23
	At end (gm)	35.5±1.63	35.27±3.29	34.27±1.85	29.64±3.17
	Weight gain %	74.92±18.43	64.42±23.23	48.16±13.1	45.9±30.85
P-value			>0.05	<0.05	<0.05

Values are expressed as mean ± standard deviation. For statistical significance experimental groups have been compared between groups and within groups..

Table-2: Comparison of the mean values of changes in the liver weight of Albino mice after oral administration of 100, 250 & 500mg/kg of aspartame for 9 weeks.

Parameters	A control	B 100mg/kg	C 250mg/kg	D 500mg/kg
Body wt. (Gm)	35.54±1.63	35.27±3.29	34.27±1.85	29.64±643.17
Liver wt. (Gm)	1.92±0.11	2.15±0.1	2.27±0.17	2.18±0.41
RTVI (%)	5.39±0.13	6.1±0.32	6.61±0.3	7.3±0.8
P-value		<0.001	<0.001	<0.001

Values are expressed as mean ± standard deviation.

Table-3: Comparison of qualitative parameters in experimental groups showing presence of histopathological changes after 9 weeks. Chi square test was applied.

	9 Weeks									
	A n=11		B n=11		C n=11		D n=11		Total	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Sinusoidal Congestion	1	9.1	11	100	11	100	11	100	34	77.3
Central vein congestion	2	18.2	11	100	11	100	11	100	34	79.5
Portal vein congestion	1	9.1	11	100	11	100	11	100	35	77.3

n= Total number of animals, f = frequency, P < 0.0001 in all parameters.

Relative tissue weight index:

The mean values of liver weight in groups A, B C and D were 1.92±0.11, 2.15±0.1, 2.27±0.17 and 2.18±0.41 respectively (Table 2). These values showed statistically significant increase in liver weight when treated with increased dose of aspartame.

The mean values of relative tissue weight index (RTWI) at the end of experiment showed considerable significant statistical increase (P<0.000) when compared between and within groups. The mean values of RTWI in groups A, B, C and D were 5.39±0.13, 6.1±0.32, 6.61±0.3 and 7.3±0.8 respectively. The mean values of body weight, liver weight and RTWI of all the groups were given in **table 2 and figure 1 and 2.**

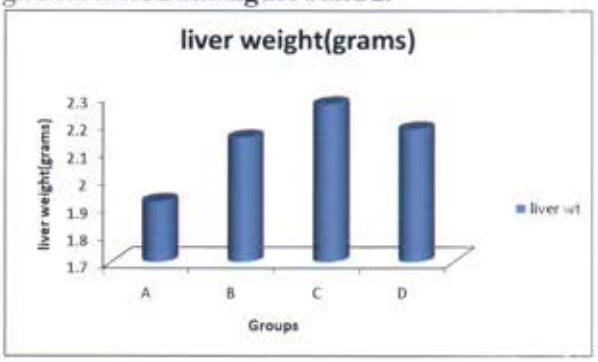

Figure-1: Effect of aspartame on mean weight gain % in different groups of albino mice.

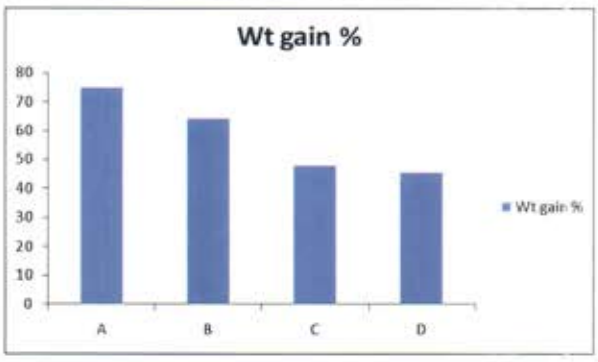

Figure-2: Effect of aspartame on mean liver

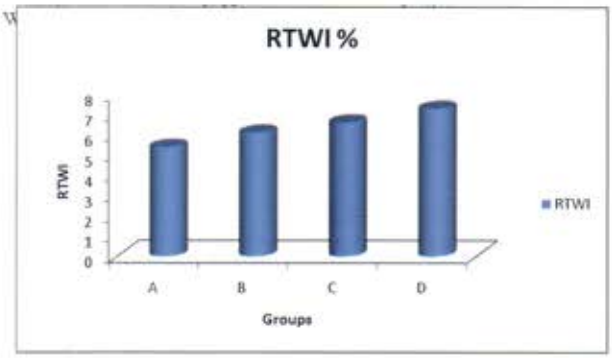

Figure-3: Effect of aspartame on mean values of relative tissue weight index(%) in different groups of albino mice.

Congestion in central, portal veins & sinusoids:

Central vein was seen to be dilated and filled with erythrocytes, this condition was known as congestion of central vein. The comparison of central vein congestion in experimental groups after 9 weeks was done by applying chi square test. Central vein congestion was positive in 100% animals in all experimental goups **(Table3).** It was found statistically significant with a p-value of < 0.001.

Statistically significant results were seen in portal vein congestion (p<0.05). It was present in all animals treated with aspartame **(Table 3)**

Sinusoids are the spaces interposed between radial cords of hepatocytes and lined by endothelial and kupffer cells. In experimentally treated animals, congested sinusoids were seen. These sinusoids were dilated and filled with erythrocytes, given statistically significant results **(Table 3).**

Discussion

Sensitivity of people about general health has increased, that is why, to prevent caloric intake people are using artificial sweeteners. Several previous studies revealed that the use of artificial sweeteners may entail some hazards to the users (Mukhopadhyay et al., 2000, CR et al., 2008). Aspartame is one of the widely consumed artificial sweetener and most of the

widely consumed artificial sweetener and most of the people are unaware about the consumption of the amount of aspartame they consume through various products. An important question is whether chronic uncontrolled consumption of aspartame is safe to humans or not.

The present study highlights the effects of aspartame on body and liver weights in a dose of 500 mg/kg/b.w after short and long term (3, 6 and 9 weeks) consumption.

The present study results showed that aspartame induced statistical significant reduction in body weight when compared with control groups of mice. In agreement with this result, Abdallah (2002) reported a significant reduction in body weight of rats after oral administration of aspartame with a dose of 100 mg/kg/body weight for 14 weeks. He attributed this weight loss to reduce food consumption per day.

Rolls (1991) alsoconcluded that aspartame may lead to a reduction of food intake. This reduction in the appetite was responsible for the decrease of body weight. A decrease in the body weight in treated animals might be due to stress caused by elevated levels of phenylalanine, decreased level of norepinephrine and thus suppressing the appetite of the treated animals and decreasing their body weight due to lower energy intake.

In another study, Blackburn et al., (1997) undertook a randomized, controlled trial in 163 obese women, to investigate the effect of aspartame during 16 week weight loss and one year maintenance program. It was concluded that aspartame facilitate reduction and also maintenance of reduced body weight.

Study by Raben (2002), provide evidence that supplementation with non-nutritive sweeteners like aspartame prevent intake of extra calories and thus prevent weight gain. Likewise, De La Huntyet al., 2006), concluded that intense sweeteners are not appetite suppressants.Their ultimate effects only depend on their integration within a reduced energy diet.

From above discussion it was not confirmed that aspartame reduced body weight either due to low caloric intake or by suppressing the appetite center due to its toxic metabolites effects.

Although body weight was decreasing but liver weight and relative tissue weightindex were increasing. According to Robbins et al (2004) increase in liver weight and enlargement of liver may be associated with accumulation of fat in hepatocytes (fatty change). Mild fatty change may not affect the gross appearance. With progressive accumulation the organ enlarges, mostly this extreme enlargement is seen in alcoholics. Increase in liver weight may be due to acutely developing congestion. These reasons of liver enlargement were alarming sign of hepatic disease, indicated that aspartame is hepatotoxic. Further researches are required to evaluate the effects of aspartame in other tissues due to its toxic metabolites.

Dilatation and congestion of vessels seen in experimental groups may be due to impaired venous drainage because of cellular swelling and injury. Congestion is a passive process resulting from reduced outflow of blood from a tissue. It can be systemic, as in cardiac failure, or local, as in isolated venous obstruction. As a result of increased blood volume and pressure, congestion leads to edema (Kumar et al., 2009).

Conclusion

The present study demonstrated the reduction in body weight after 9 weeks administration of aspartame in three different doses. Significant decrease in weight gain %age indicates that aspartame can be used in weight loss programme but with caution. But statistical significant increase in liver weight and relative tissue weight index indicating hepatic damage so excessive use of aspartame should be discouraged.

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Original Article

Use of Mycobacterium Culture in Confirming Diagnosis of Tuberculosis in smear negative pulmonary Tuberculosis Suspects Registered in DOTS Implemented Setting at Lahore

Aamir Nazir, Neelam Raheel and Jalees Khalid Khan

Objective: Early diagnosis of disease and prompt initiation of treatment is essential for an effective tuberculosis control programme. There is concern that smear negative pulmonary tuberculosis may be over-diagnosed and treated in overburdened and resource poor countries. This study was conducted to determine what proportion of patients being registered for smear negative pulmonary tuberculosis treatment have microbiologically confirmed tuberculosis.

Material and Methods: Subjects of either sex above the age of 15 year with symptoms of and x-ray finding consistent with pulmonary tuberculosis were selected. Sputum specimens of 124 smear negative pulmonary tuberculosis suspects about to be registered for smear negative pulmonary tuberculosis treatment by the national tuberculosis programme were inoculated on LJ culture medium to isolate the organism. The result of smear and culture were then compared.

Results: A total of 124 sputum smear negative cases were subjected to culture on LJ medium. Out of these 18(14.51%) were confirmed positive by culture.

Conclusion: Sputum culture is gold standard the diagnosis of tuberculosis. Complementing smear negative cases with culture may help in reducing over diagnosis of pulmonary tuberculosis.

Keywords: tuberculosis (TB), mycobacterium tuberculosis (MTB), pulmonary tuberculosis (PTB), acid fast bacilli (AFB), ziehl neelsen staining (ZN), löwenstein-jensen medium (LJ).

Introduction

For an effective tuberculosis control programme early diagnosis of disease and prompt initiation of treatment is essential.[1] There is concern that smear negative pulmonary tuberculosis may be over-diagnosed and treated in overburdened and resource poor countries.

Diagnosis of tuberculosis is made by finding acid-fast bacilli (AFB) on direct microscopic examination of sputum smear but it has been observed that microscopic is not very sensitive technique.[2] Half of all cases with tuberculosis can present with negative results.[3,4] These smear-negative cases can be diagnosed by culture of *Mycobacterium tuberculosis* because culture of *Mycobacterium tuberculosis* is the gold standard for diagnosis of tuberculosis.[5] According to WHO report 2004, only 3.9 million cases were sputum positive from of out 8.8 million cases diagnosed in 2002.[6]

DOTS strategy relies mainly on sputum smear microscopy for detection of pulmonary tuberculosis cases. World Health Organization (WHO) recommended strategy of examination of three sputum smears for acid-fast bacilli lacks sensitivity. Studies conducted in different settings have reported an increasing proportion of pulmonary tuberculosis patients with negative smear results. Therefore, one cannot rely on smear examination by ZN staining method only; otherwise significant number of tuberculosis patients will be missed[7] to be initiated on treatment. Such missed cases remain a constant source of infection and threat to community.

Chest x-ray is restricted to diagnosing pulmonary tuberculosis among those suspects whose sputum is negative for AFB.[8] Although pulmonary tuberculosis is usually associated with radiographic abnormalities,[9] the lesions are non-specific and their interpretation depends on many factors.[10] Due to these reasons the proportion of over diagnosing tuberculosis remains high even restricting chest radiograph to smear negative pulmonary tuberculosis suspect.[11]

This study was conducted to determine what proportion of patients being registered for smear negative pulmonary tuberculosis treatment have microbiologically confirmed tuberculosis.

Material and Method

A descriptive observational study was conducted at

outpatient department of Model Chest Clinic Lahore and Punjab Tuberculosis Reference Laboratory, Institute of Public Health, Lahore from January 2012 to December 2012.

124 new pulmonary tuberculosis suspects age 15 years and above of either sex with symptoms and x-ray finding consistent with pulmonary tuberculosis about to start treatment for tuberculosis were selected. Suspects with previous history of tuberculosis and patients currently receiving anti-tuberculosis treatment were excluded from the study.

Sputum specimens of these pulmonary tuberculosis suspects were processed for culture by digestion, decontamination and concentration following modified Petroff`s method and were inoculated on LJ culture media for six weeks to isolate the organisms. Readings were taken every week for eight weeks. The identity of the isolates was made by growth rate and colony morphology. All processing was performed in Bio-safety level-2 cabinet. Sputum specimen were kept in refrigerator at 4-6oC when processing was delayed. Standard strain of H 37 RV was used for the quality control. HIV screening was not performed.

Results

A total number of 213 cases of pulmonary tuberculosis were registered in the DOTS implemented setting. 89 patients had smear positive on microscopy and were registered as smear positive pulmonary tuberculosis. 124 patients were about to register for treatment as smear negative. These smear negative patient submitted three sputum specimens for Mycobacterium Tuberculosis culture. LJ culture media was used for inoculation. Clinically diagnosed cases of smear negative pulmonary tuberculosis belonging to age fifteen and above.

In this study there were 124 smear negative patients, out of which 18(14.51%) were positive on culture while 106(87.84%) patients remained culture negative **(Table -1).**

Table-1: culture results of smear-negative pulmonary tuberculosis suspects n - 124.

Z-N Staining	Culture Results Positive	Negative	Total
Negative	18 (14.51%)	106 (85.48%)	124 (100%)

Discussion

This study was conducted to observe the use of mycobacterium tuberculosis culture in confirming the diagnosis of tuberculosis in smear-negative pulmonary tuberculosis suspects. In this study sputum samples of 124 patients about to be registered for smear negative pulmonary tuberculosis treatment by the national tuberculosis programme were inoculated on LJ culture medium. Out of these 124 patients, 18(14.51%) patients were positive on culture while 106(85.48%) patients remained negative on culture examination. Some of these culture negative patients may be due to tuberculosis but they are not detected by culture at present.

This phenomenon of culture positivity in smear negative cases is not unusual occurrence. From the literature review it was clear that culture positivity among smear negative cases varies in various studies conducted in different regions of the world. Van Dennl, (2004)[12] reported in his review study 24-62 % positivity rate in different geographical locations.

In this study only 14.51% of those who were presumed to have active PTB and started on anti-tuberculosis treatment actually had TB on sputum culture results.

Additional yield of bacteriological confirmed cases is 20% in this study. In other studies 40%, 27.2% of patients registered for smear negative pulmonary tuberculosis treatment had culture positive results for mycobacterium tuberculosis.[13,14] Wide variability in the results reported by the different researchers and results of present study may be due to various causes.[15]

We are unable to confirm diagnosis in a significant proportion 85.48% of smear-negative pulmonary tuberculosis suspects registered for the treatment of tuberculosis. Some of these cases might be suffering from tuberculosis despite the lack of microbiological confirmation. The results of this study shows that we might be over diagnosing and treating smear negative tuberculosis.

In health care facilities with no access to culture, the services of a thoughtful clinician to interpret the finding secured by all means like good medical history, medical examination and an x-ray film of the chest remains important.

The use of chest x-ray for diagnosis of pulmonary tuberculosis can be compromised by poor quality film, low specificity and difficulties with interpretation.[16] In our country with high disease burden and where tuberculosis control programme is implemented through primary health care system, x-ray reporting is being done by primary care physicians without training in diagnosis of tuberculosis. Chest x-ray remains an important test for the diagnosis of smear negative pulmonary tuberculosis, so appropriate training for primary care physician can help in improving the diagnostic skills.

Chemicals used for decontamination and the centrifugation used for concentration of samples during preparation of inoculum have a major impact on the sensitivity of the test. Factors that influence the quantum of viable bacilli in the specimen such as type of collection (spot or overnight) and previous chemotherapy should also be considered.[15,16]

Conclusion

To reduce the over diagnosis of smear negative pulmonary tuberculosis and reducing burden of unnecessary cost of treating individual who may or may not actually having tuberculosis, use of culture is needed.

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Original Article

Comparison of Open Mesh Hernioplasty Verses Laparoscopic Intraperitoneal Onlay Mesh for Ventral Hernias

Rashid Mansoor Arshad, Allah Nawaz, Ahsan Khan, Usman Ismat Butt and Mahmood Ayyaz

Objective: Compare the outcome of laparoscopic intraperitoneal onlay mesh (IPOM) with open mesh repair in ventral hernias.

Material and Methods: Seventy patients were divided into two groups of 35 each. Group A = IPOM repair and Group B = Mesh hernioplasty.

Results: The mean±SD age was in group A 44.54±7.06 years and 46.40±7.14 in group B. Twelve (34%) patients were male in group A, 14 (40%) patients were in group B and 23 (66%) patients were female in group A and 21 (60%) were female in group B with male to female ratio 1:1.91. There were only 3 (8%) patients had postoperative pain in group A and 10 (28%) patients were in group B ($p<0.05$) which is statistically significant. In comparison postoperative early surgical site infection in both groups, there was no patient on 3rd postoperative day in both groups. On 10th postoperative day 1 (3%) patient had surgical site infection in group A and 6 (17%) patients had postoperative early surgical site infection in group B ($p<0.05$) which is statistically significant.

Conclusion: Laparoscopic approach appears to be as effective, safe, feasible, and cosmetically good procedure. It has fewer rates of early surgical site infection and postoperative pain. Laparoscopic repair is good alternative to the open repair in the treatment of ventral hernias.

Keywords: Ventral hernia, laparoscopic intraperitoneal onlay mesh repair, mesh hernioplasty, postoperative pain, surgical site infection.

Introduction

A hernia is a protrusion of a tissue, structure, or part of an organ through the muscle tissue or the membrane by which it is normally contained.[1]

Approximately 100,000 ventral hernia operations are performed each year in United States.[2] When a ventral hernia occurs, it usually arises in the abdominal wall and also it can develop at umbilicus or any other area of the abdominal wall. Among the common ventral hernias are the incisional and para-umbilical hernias constituting about 85% of the overall ventral abdominal hernias. Such incisional hernias result after 2-20% of laparotomies for various diseases.[3] With better understanding of mechanics of ventral hernia, surgical sepsis and anesthesia, there are refinements in the techniques of ventral hernia repair.

Mesh hernioplasty is the current gold standard for abdominal wall hernias but open repair of ventral hernias is associated with substantial complications and recurrences. Infection remains one of the most common complications of this technique.[4] One study shows wound infection rate of 14%[5] and postoperative pain of about 28%[6] using open mesh repair. Laparoscopic procedures are cosmetically good. Laparoscopic ventral herniorrhaphy (LVH) was first described in 1993.[7] The principle of laparoscopic incisional hernia repair is based on Rives Stoppa repair, first published in 1985.[8]

Laparoscopic intraperitoneal onlay mesh (IPOM) is relatively a new technique in our setup although much work has been done in west. The intraperitoneal onlay mesh could be an interesting alternative as it is much easier to perform and faster to execute.[9] Laparoscopic technique to place an intraperitoneal mash to cover the hernia defect was first reported in 1993 by LEBLANC and BOOTH.[2]

One study shows wound infection rate of 0% and postoperative pain of about 8% using laparoscopic intraperitoneal onlay mesh technique.[10]

The rationale of this prospective randomized study is that laparoscopic intraperitoneal onlay mesh is relatively a new procedure performed in our setup although it is very commonly performed procedure in Western countries. Therefore, we want to aware our community that this procedure would be a better alternative to open mesh repair in terms of outcome in near future.

Material and Methods

A Prospective Randomized clinical trial was

Conducted at Department of Surgery, Services Hospital Lahore for duration of six months01-01-2011 to 30-06-2011. A total of 70 patients; 35 in each group, of ventral wall herniaswere included through Non probability purposive samplingwith 80% power of test, 8% margin of error i.e. in open mesh 14% and 0% in laparoscopic intraperitoneal onlay mesh (least among the two). Allmales and females above 18 years of age presenting with primary reducible ventral hernia (clinically diagnosed cases)with a defect size between 3 to 15 mm were included. Patients with irreducible, strangulated hernia (on history and examination), skin excoriation, loss of domain orco-morbid conditions were excluded from the sample size. Recruited through outdoor patient department, patients were evaluated by history and clinical examination. They were randomly allocated into two groups A and B by using random numbers table method after matching the confounding variables. After informed consent all patients were operated under general anesthesia.

For group A laparoscopic intraperitoneal onlay mesh repair was performed. A polypropylene mesh (Prolene-Ethicon®) was placed and fixed. For group B Mesh hernioplasty was performed.

All patients were monitored for presence or absence of postoperative pain at 6 weeks postoperatively and for early surgical site infection assessed on 3rd, 5th and 10th postoperative day.

No life threatening risk was involved per se in two procedures. However any untoward per-operative incident was dealt with on emergency basis and was appropriately recorded.Frequency and percentages were calculated for categorical variables. Mean and standard deviation were calculated for numerical variables. The significance of differences observed by the two methods being mainly qualitative (postoperative pain and early surgical site infection) was subjected to Chi Square test or Fisher's exact test. A p value of 0.05 or less was taken as significant.

Results

A total of 70 patients,35 in each group, at Department of General Surgery Services Hospital Lahore were studied over a period of 6 months from 01-01-2011 to 30-06-2011.

The age range was 32 to 65 years. In group 'A' 13 (37%) patients and in group 'B' 10 (28%) patients were between 32-41 years of age. In group 'A' 17 (49%) patients and in group 'B' 17 (49%) patients were between 42-51 years of age. Four (11%) patients in group 'A' and 7 (20%) patients in group 'B' were between 52-61 years of age. Only 1 (3%) patient in group 'A' and also 1 (3%) patient in group 'B' were >61 years of age. The Mean±SD age was 44.54±7.06 in group 'A' and 46.40±7.14 was in group 'B'.

Table-1: Comparison of open mesh hernioplasty verses laparoscopic intraperitoneal onlay mesh for ventral hernias.

Variables Age (years)	No of Patietns	Group A Percentage	No of Patietns	Group B Percentage	P value
32 - 41	13	37.0	10	28.0	
42 - 51	17	49.0	17	49.0	
2 - 61	4	11.0	7	20.0	
> 61	1	3.0	1	3.0	
Total	35	100.0	35	100.0	
Male	12	34.0	14	40.0	
Female	23	66.0	21	60.0	
Paraumbical hernia	12	49.0	18	52.0	
Umbical hernia	12	34.0	12	34.0	
Epigastric hernia	6	17.0	5	14.0	
Postoperative pain	3	8.0	10	28.0	<0.05
Early surgical site infection	1	3.0	6	17.0	
3rd postop day	-	-	-	-	
5th postop day	-	-	1	3.0	
10th postop day	1	3.0	6	17.0	<0.05

In this study 12 (34%) patients were male in group 'A' and 14 (40%) were male in group 'B'. Similarly 23 (66%) patients were female in group 'A' and 21 (60%) patients were female in group 'B'. Male to female ratio was 1:1.91 in group A and 1:1.50 in group 'B'.

Table-1 shows the diagnosis of patients in both groups. In group A 17 (49%) patients were paraumbilical hernia and 18 (52%) patients were in group B. Out of total 70, 12 (34%) were found umbilical hernia in group 'A' and also 12 (34%) patients were in group 'B'. Six (17%) patients were diagnosed of epigastric hernia in group 'A' and 5 (14%) patients were in group 'B'.

Table also shows the postoperative pain and early surgical site of infection. There were 3 (8%) patients suffered from postoperative pain in group 'A' and 10 (28%) patients in group 'B'. Only 1 (3%) patient was suffered in early surgical site infection in group 'A' and 6 (17%) patients were in group 'B'.

There were only 3 (8%) patients had postoperative pain in group 'A' and 10 (28%) patients were postoperative pain in group 'B'. A p value was <0.05 which is statistically significant.

There was no patient on 3rd postoperative day in both groups. On 5th postoperative day there was no patient in group 'A' and only 1 (3%) patient had postoperative early surgical site infection in group 'B'. On 10th postoperative day 1 (3%) patient had surgical site infection in group 'A' and 6 (17%) patients had postoperative early surgical site infection in group 'B'. A p value was <0.05 which is statistically significant.

Discussion

A study reported Mean patient age of 58.8 years in open group and 58.1 years in the laparoscopic group.[11] Another study done reported, wherein the mean±SD age was 57±13 years out of total 121 patients.[12] In a study the male to female ratio was 3:2.[13]

A study reported different varieties of the ventral hernia and their mode of presentation are shown paraumbilical hernia remains the commonest type of ventral hernia in both the groups and sexes. In the present study there was paraumbilical hernia in 17 (49%) in group A and 18 (52%) patients had in group B which is comparable with other studies. In our study paraumbilical hernias was also the commonest type of ventral hernia in both groups.

Postoperative pain can lead to readmissions, hence increasing the morbidity and costs of laparoscopic procedure.A study done by Helgstrand, this complication of laparoscopic incisional hernia repair has been found.[14]

Suture site pain is the most common minor complications reported. The suture site pain experienced may have originated from tissue or nerve entrapment during placement of sutures or tacks through the full thickness of the anterior abdominal wall. It could also have resulted from traction of the transabdominal sutures fixing the mesh to the anterior abdominal wall.In the present study there was postoperative pain in 3 (8%) in group A and 10 (28%) in group B which is comparable with national and international studies.

Some studies report that the wound infection is lower in laparoscopic hernia repair compared to open, as there is decreased extent of tissue dissection in the former. Seromas have also been associated with chronic postoperative pain. In laparoscopic hernia repair, the hernia sac is not excised.[15,16] This effectively leaves behind a potential space for seroma formation. It happens to be one of the complications inherent to this procedure.[17] Most seromas resolve with time, some requiring eight to 12 weeks for complete resolution. Majority of the authors considered the seromas for conservative management. In such cases ultrasound of abdomen can be an useful diagnostic tool.[18]The comparison of the results revealed that the major advantage of laparoscopy was the shortened postoperative hospital stay and the reduced incidence of mesh infection ($P<0.05$). On the other hand, operation time was significantly longer in the laparoscopy group ($P<0.05$). The major complications encountered in the laparoscopy group were ileus and a missed enterotomy. The most frequent minor complication was seroma, which was significantly more frequent in the laparoscopy group ($P<0.05$). Postoperative pain assessment revealed similar results in both groups.Laparoscopic repair of ventral hernias seems to be safe and effective.[19] Overall, fewer complications are reported after LVHR than after open mesh repair especially in relation to wound and mesh infection.

The laparoscopic repair of ventral hernia utilizes the principles of the open technique popularized by Stoppa, Rives et al, and Wantz. These principles include using large mesh prosthesis, adequate overlap of the hernia defect, and eliminating tension. In the laparoscopic technique, the mesh is placed intraperitoneally and extensive soft tissue dissection is eliminated. It has been shown, based on widely quoted comparative studies that with LVHR wound complication rate, patient discomfort, length of hospital stay, time to return to normal activities and

recurrence rates are all reduced. LVHR has also been established as a cost-effective procedure, with total facility costs for the laparoscopic repair being significantly lower than that for the open repair. In a study reported by there is a significant increase, given that the mortality rate of uncomplicated ventral hernia is only 0.05%. One of the most important aspects of ventral hernia repair is that the patients understand these implications preoperatively and have a clear understanding of the need to convert to an open procedure and the possibility that they still may have their hernia at the conclusion of the procedure.[20] In our study there was no mortality in group A and nor in group B which is comparable with international and national studies.

A new technique for laparoscopic ventral hernia repair using 5-mm ports only and an alternative method for mesh insertion. This technique appears to be safe, can decrease incidence of postoperative port-site hernias, and is applicable to most patients undergoing laparoscopic ventral hernia repair. This technique should be evaluated in larger numbers of patients to assess its advantages and evaluate outcomes.[21]

Conclusion

The laparoscopic approach appears to be as effective, safe, feasible, cosmetically good, shorter operative time, faster recovery with low recurrence rates, low rates of wound and mesh infection, shorter hospital stay, low postoperative morbidity and good alternative to the open repairs in the treatment of primary ventral hernias. Advanced surgical skill, laparoscopic experience and high technology are mandatory factors for successful ventral hernia repair.

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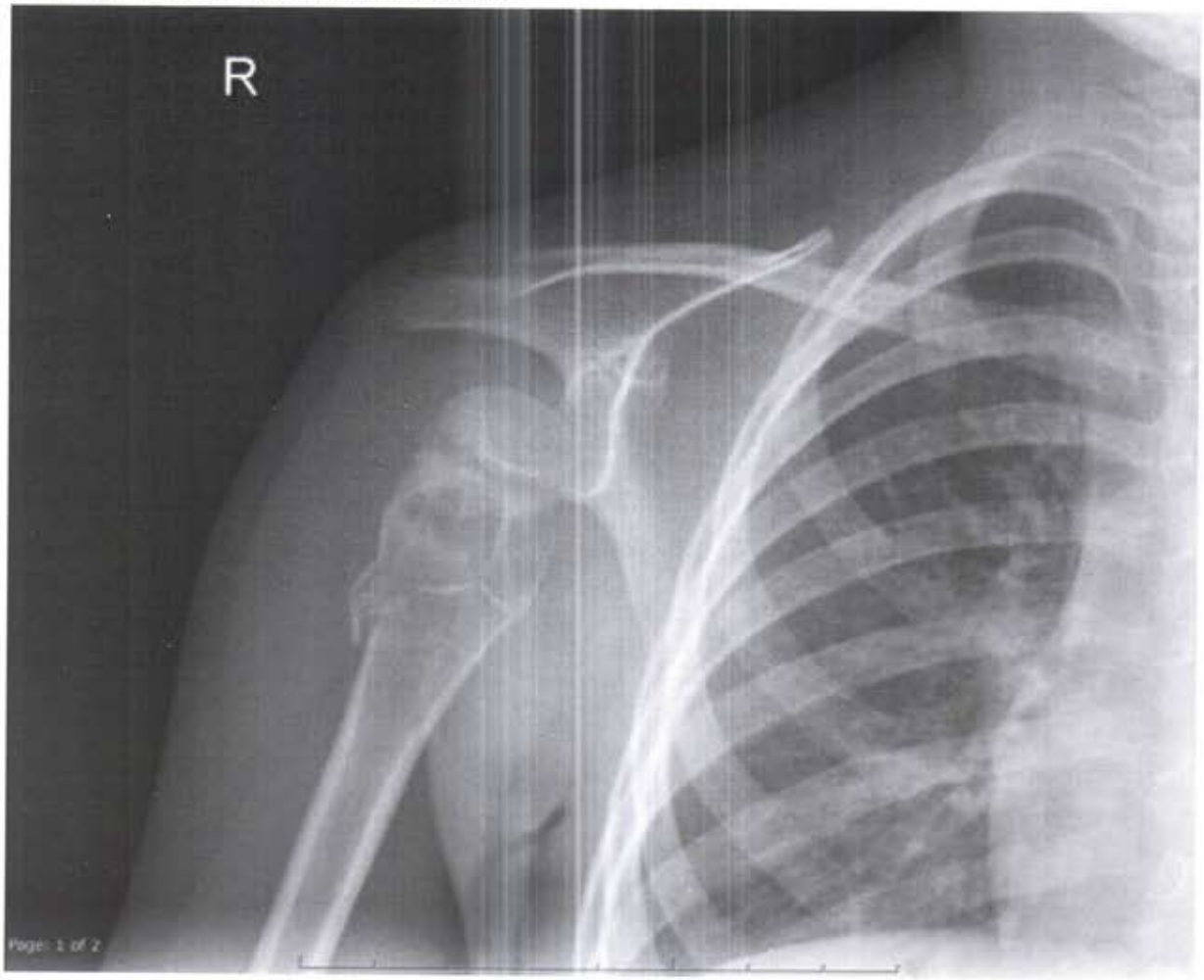
Picture Quiz

What classic sign is seen in this bone lesion. ?



See answer on page # 33

Original Article

A Retrospective Analysis of Postpartum Complications in Patients Admitted to Fatima Memorial Hospital, Lahore

Rubina Iqbal, Samina Khurshid and Misbah Khurshid

Objective: To evaluate postpartum complications and their outcome in patients admitted to Fatima memorial Hospital, lahore and to find out avoidable causes.

Material and Methods: This descriptive study was conducted in the Department of Obstetrics and Gynaecology, Fatima Memorial Hospital ,Lahore from December,2012 to December,2013. A total of 100 patients who were admitted through gynaecology outpatients department or emergency with postpartum complaints following delivery at home or hospital vaginally or through caesarean section were included in the study.

Results: Mean age of the patients was 26.70±4.85 years. Out of 100 patients, 50 patients had no complication. Out of remaining 50, 19 had postpartum haemorrhage while 18 had postpartum eclampsia. Seven had puerperal sepsis, 2 patients with thromboembolic disease, one with postpartum depression, 2 with urinary tract infection and one with breast disease.

Conclusions: PPH is major cause of maternal morbidity and mortality followed by postpartum eclampsia. Maternal mortality and severe morbidity may be reduced by regular prenatal care.

Keywords: postpa rtum complications, maternal morbidity, maternal mortality, eclampsia.

Introduction

Women of reproductive age are always at risk due to child bearing. It may be during pregnancy, labour or even after delivery of baby. Postpartum period is the time immediately women deliver her baby. It lasts approximately up to 6 weeks or until reproductive organs return to normal size. The most serous complications mental disorders and breast infection can cause much morbidity.[1] The maternal mortality rate in developing countries is established 440/100,000 live births and 50-71% of deaths happen during childbirth and 50 to71% in postpartum period.[2] The most important cause of maternal death is excessive bleeding. Postpartum bleeding can kill a healthy women with in 2 hours.[3]

Postpartum hemorrhage is defined as blood loss more than 500 ml in vaginal delivery and 1000ml in caesarean delivery. Incidence of PPH has been 3% of estimated 4-6% of all pregnancies. PPH is divided into primary (early) or secondary (late). The main caused of primary PPH are uterine atony which accounts for 90% cases, genital tract trauma, partially retained placenta ,placenta previa and accreta.[4] The second most common direct cause is infection responsible for late postpartum death. It is major source of maternal mortality on one hand and morbidity on the other. Any infection following delivery is classified as postpartum or puerperal infection.[5] Endometritis is most common source of postpartum infection hemolytic streptococcus is major causes of sepsis. Overall postpartum infection is estimated to occur in 1-8%of all deliveries. Maternal death rates associated with infection rang from 4-8% or approximately 0.6 maternal death per 100,000 liver birth.[6] Post surgical wound infection. Perinatal cellulitus. Mastitis. Respiratory complication, retaind product of conception. Eclampsia, another cause of maternal death is most common during antepartum period, but 20-25% of eclampsia occurs in postpartum period.[7]

Haemostatic problem in pregnancy resulting from hypercoagulant status is thrombosis. Venous thromboembolism is one of the most serious complications. Thromboembolic disease is said to be six times more common during pregnancy then in nonpregnant state and within the pregnancy, the risk is minimum in first trimester and greatest in the puerperium, especially when baby is delivered by caesarean section. In developed world, the incidence of deep venous thrombosis (DVT) lies between 0.05-1.8% and its twice as common as pulmonary embolism.[8] The puerperium is frequency associated with psychological morbidity with 1.0-15% of women experiencing anxiety or depression. Babyblues are very common affecting 30% to 75% new mothers. Postpartum depression occurs in 13% of women. Mastitis is a bacterial infection that can develop in one or both breasts. It is most common in

women who have recently give birth, especially those who are breast feeding.[9] The commonest urinary complication in puerperium is infection but urinary retention or in continence may also cause problems. Signs of serious complications include; chills, nausea , vomiting, chest pain, fever of 100.4F, increasing tenderness in lower abdomen, red hot painful breasts, redness or drainage from the episotomy or caesarean incision, excessive blood loss such as soaking more then 1pad every hour for 2-3 hours, vaginal discharge that has strong unpleasant odor, burning micturation, severe headache, severe depression.[10] This study was carried to evaluate postpartum complications and their outcome in patients admitted to Fatima memorial hospital and to find out avoidable causes.

Material and Methods

This descriptive study was conducted in the department of Obstetrics and Gynecology, Fatima memorial Hospital, lahore from December 2012 to December 2013. A total of 100 patients who were admitted through Gynecology outpatients department or emergency with postpartum complaints following delivery at home or hospital vaginally or through caesarean section were included in the study.

Results

Table-1: Distribution of cases according to Mode of delivery.

No. Of Delivery	No of Cases	Percentage
Spontaneous us vaginal delivery	52	52
LSCS	36	36
Foreceps	12	12

Table-3: Mode of admission.

Admission mode	No of Cases	Percentage
OPD	44	44.0
Emergency	56	56.0

Table-4: Presenting symptoms.

Symptoms	No of Cases	Percentage
Vaginal bleeding	34	34.0
Fever	07	07.0
Chest pain	04	04.0
Abdominal pain	28	28.0
Vaginal discharge	08	08.0
Depression	02	0.2.0
Headache with fite	15	15.0
Other scomplications	02	02.0

Table-5: Parity of patients.

Place of Deliver	No of Cases	Percentage
Home	40	40.0
Private clinic/maternity home	10	10.0
Hospital, delivery	50	50.0

Discussion

Antenatal care can prevent maternal morbidity and mortality in many women. During the study it was observed that most of the patients who has postpartum complications were delivered at home (25%) most of them were non-booked (76%) and presented to emergency.In Pakistan that is developing country with population118.8 million, about 4million births are attended by trained persons and only 5-10% deliveries take place in hospital. About 25000 females die of causes related to pregnancy and child birth every year. Commonest causes of maternal death are hemorrhage, infection, eclampsia and obstructed labour.[11] In present study of 100 patients admitted with postpartum complications, 50 had no complications on examination. Out of 50 which had complications, postpartum hemorrhage was detected in 19 (19%), eclampsia in 18 (18%), infection in 7 (7%), thromboembolic disease in 2 (2%) each. A similar study conducted at Mayo Hospital, Lahore to evaluate postpartum complications and their outcome showed that out of the 64 patients, septicemia was detected in 26 (49.5%), renal failure in 9 (12%), disseminated intravascular coagulation in 6 (10%), Jaundice in 6 (10%), eclampsia/fits in 8 (12%), tuberculous in 4 (6%), tetanus in 3 (5%), postpartum cardiomyophaty in 2 (3%) and stroke in 1 (1.5%) patients.[12] In spite of marked improvements in management early PPH remains a significant contributor of maternal morbidity and mortality both in developing countries and in the hospitals. The exact incidence is 10-19% of pregnancies with the actual number in the range of 2.4%.[13] Eclampsia was other leading cause which led to maternal mortality or morbidity during this study. It was found in 18% of patients.[14] Davidson et al reported the antepartum 38% or intrapartum 18% pathophysiology is tought to involve cerebral vasospasm leading to ischemia and cerebral edema.[15]

Septicimia another cause occurred in 7 patients. Prolonged obstructed labour repeatd vaginal examination with septic measures. Instrumental delivery or manual removel of placenta can lead to infection andhas also been rported in another study carried out in obstetrical ward.[17] In the puerperium alkaline lochia reduces acidity of vagina to such an extent that saprophytic organism do not flourish after third day pureperal saprophytes may be found in utreus, the examination becoming more frequent and more marked pureperium advances. Infection is conveyed from outside during labour or during early pureperium, TBAs should be familiarized with aspetic techniques and should know to refer high risk patients to hospitals.[17] Most of the women in Pakistan do not realize the significance of antenatal care and therefore seek no advice and have no treatment during pregnancy induced hypertension, multiple pregnancies and abnormal placentation. The tradional birth attendants in Pakistan are untrained and some times unaware of the problems encountered during pregnancy and labour. So they bring the patient in hospital very late and usually in serious condition. Illiteracy, poor nutrition, improper referral system and lack of transport are all contributory factors to high maternal mortality.[18] According to Gordon, anaemia must be corrected during pregnancy because anaemic patient tolerates hemorrhage badly. Hemoglobin estimation should be made in very expectant mother early in pregnancy nd give very women a good course of iron for at least six weeks during pregnancy.[19]

Conclusion

It is concluded from the study that maternal mortality and severe morbidity rates are lowest among women receiving regular prenatal care who are managed by experienced physicians in tertiary centres. So, antenatal care should be promoted at every level.

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Original Article

Perceptions of Medical Students about Educational Environment at Services Institute of Medical Sciences, Lahore

Mohammed Shahzad Anwar, Tariq Ghafoor, Mohammed Ayub, Asad Ali Shah, Mohammed Farooq, Abdul Mannan and Gohar Wajid

Objective: The objective of this study was to assess the perceptions of undergraduate medical students of Services Institute of Medical Sciences (SIMS), using DREEM questionnaire.

Material and Methods: All students from the final year MBBS class of the medical college (n=150) were included in the study. The non-parametric chi-square test and Mann Whitney U Test were used to determine the significance of differences (proportion of frequencies) for individual items.

Results: The total no of final year students of medical college were 150 with 135 respondents with 43% males and 57% females. DREEM score SIMS medical college in metropolitan city was 118.6 indicating a positive perception.

Conclusion: DREEM is a valid instrument for the measurement of students' perceptions worldwide. The students of SIMS have positive perception about educational environment of the institute.

Keywords: Academic perception, educational environment, DREEM (Dundee Ready Educational Environment Measure), Pakistan.

Introduction

The environment in the classroom, departments, hostels and other facilities is associated with the success of a medical institution. These domains make up the total educational environment.[1-4] By Understanding the environment of medical institutions different strategies can be effectively developed for appropriate changes. The educational environment have a significant impact on their behaviour, academic progress and sense of well being of students.[4,5,6,7] In recent years there has been an increasing interest in the role of learning environment in undergraduate medical education. Appropriate educational environment may help in successfully achieving goals of a curriculum.

Dundee Ready Educational Environment Measure (DREEM) for undergraduates have been used to measure educational environment.[3] The 50 item DREEM questionnaire was developed by an international Delphi panel of professional health educationists. It has been applied to several undergraduate courses worldwide.[5,6,9,10] The inventory was validated by over 1,000 students world-wide and is now being used widely in order to measure and 'diagnose' undergraduate educational environment in the health professions. It has been translated into several languages, including Spanish, Portuguese, Arabic, Swedish, Norwegian, Malay and Thai; it has been used in several settings including the Middle East, Thailand, Indonesia, Malaysia, Norway, Sweden, Venezuela, Brazil, the West Indies, Sri Lanka, Oman and Yemen.[11-13]

The DREEM measures perceptions of the learning environment of educational institutions in the following five subscales:

- Students' perceptions of learning (PoL)
- Perceptions of teachers (PoT)
- Academic self-perception (ASP)
- Perceptions of atmosphere (PoA)
- Social self-perceptions (SSP).[5]

Validity and reliability of the tool has been established through several studies conducted in different institutions.[7-9]

The present study was conducted to measure the educational environment at Services Institute of Medical Sciences Lahore. The aim of this study was to assess the perceptions of undergraduate medical students of Services Institute of Medical Sciences (SIMS), using DREEM questionnaire.

Material and Methods

It was a Quantitative, Cross-sectional survey based on DREEM questionnaire done at SIMS. The instrument consists of 50 items each scoring on a five point Likert scale.

Scoring the DREEM

Items are scored as follows:

4 Strongly Agree (SA),
3 Agree (A),
2 Uncertain (U),

2 Uncertain (U),
1 Disagree (D) and;
0 Strongly Disagree (SD).

An institute can score a maximum 200, indicating the ideal educational environment as perceived by the students. A score of 0 is the minimum and would be a very worrying result for any institute [8,9]

The following is an approximate guide to interpreting overall score:

0-50	Very Poor
51-100	Plenty of Problems
101-150	More Positive than Negative
151-200	

Data were collected from a total of 135 students of final year.We distributed the questionnaire at the end of scheduled lecture. The attendance was ensured through the department of medical education. Before administration of the questionnaire the students were thoroughly briefed about the purpose of the study and data collection process. Anonymity and confidentiality of their responses were maintained.

We explained the students that this data will be used for research, quality assurance and improvement purposes. Terms like 'factual learning', 'ridicule', 'authoritarian' were explained before the students began to fill the questionnaire.

Statistical analysis was carried out through SPSS version 19.The non-parametric Mann Whitney U Test was used to determine the significance of differences (proportion of frequencies).

Results

Students' Perceptions about Educational Environment at SIMS. Out of a total of 150 students, 135 (90.9%) filled the questionnaire. There were 43% males and 57% females in the sample.

Student Perception of Learning at SIMS (SPL)

The average score for this subscale was 27.2 (54.6%). Overall, perception about learning environment was positive. Mean score for males in the sub scale was 27.5, while mean score for females was 26.9 ($P<0.05$). There were no items with mean scores $\geq$ 3.5 (real positive). Nine items had mean score between two to three, interpreted as items that 'could be improved'. There were 3 items with mean score < 2, meaning these were the problem areas needing serious attention.

Students' Perception of Teachers at SIMS (SPT)

The total mean score of subscale was 25.2 while the total mean score for males was 26.2 and for females, 24.2 ($P<0.05$). So the interpretation of this subscale was that the students perceived that the teachers were moving in the right direction . The items with mean scores $\geq$ 3.5 (real positive) were zero. There were 10 items with mean score between two to three, meaning these items needed enhancement. There was 1 item with mean score < two, identified as problems area needing seriuous attention.

Student Academic Self Perception at SIMS (SASP)

The total mean score of subscale was 16.6 with total mean score of males as 18 and for females as 15.2 ($P<0.05$). 4 items scored between two to three, interpreted as needing enhancement. There were 4 items with mean score < two, showing flaws needing improvement in the system.

Student Perception of Atmosphere at SIMS (SPA)

The total mean score of subscale was 29.6, while total mean score of male was 29.4 and females 29.9 ($P<0.05$). So the interpretation of this subscale was a more positive change The items with mean scores $\geq$ 3.5 (real positive) were zero. There were 12 items with mean score between two to three (needs enhancement).

Student Social Self Perception at SIMS (SSSP)

The total mean score in this subscale was 19.95, while the mean score for males was 19.8 and for females was 20.1 ($P<0.05$). So the interpretation of this subscale was not too bad. Only one item had a mean scores $\geq$ 3.5 (real positive). There were 6 items with mean score between two and three indicating 'needs enhancement'. There was no item with mean score < two.

The total DREEM score for SIMS was 118.9 (59.3%) indicating more positive than negative perceptions. The students also perceived that the place was nice from social perspective (SSSP score = 19.95). Following items received minimum score by the students, indicating serious deficiencies for improvement.

- what I have to learn seems relevant to a career in healthcare (Score 1.8).
- I am confident about passing this year (Score 1.7).
- I feel I am being well prepared for my profession (Score 1.9)
- I have learnt a lot about empathy in my profession (1.9)

Table-1 provides the overall score and individual subscale scores for SIMS.

Difference between the Perceptions of Males and Females about Educational Environment at SIMS.

The total scores of all subscales between males and females was 120.9 and 116.3 respectively ($P<0.05$). The overall score of perception of females was lesser

Table-1: Students' overall perceptions of educational environment at SIMS.

DREEM & is Subscales	Maximum score	Mean Score for SIMS		Interpretation
		Mean Score	Percentage	
All items	200	118.6	59.9	More positive than negative
SPL	48	27.2	56.66	A more positive perception
SPT	44	25.2	57.27	Moving in right direction
SASP	32	16.6	51.87	Feeling more on the postive side
SPA	48	28.65	61.77	A more postive attitude
SSSP	28	19.95	71.25	Not too bad

Table-2: Distribution of male and female responses about educational environment at SIMS.

Domains	Male	Female	P-value	SIMS Mean
Students' Perception of Learning	27.5	26.9	NS	27.2
Students' Perception of teachers	26.2	24.2	24.2	16.6
Students' Academic Self-Perception	18.0	15.2	<0.05	29.65
Students' Perceptions of Atmosphere	29.4	29.9	NS	29.65
Students' Social Self Perceptions	19.8	20.1	NS	19.95
Total	120.9	116.3	NS	118.6

than the score of males about educational environment but generally the response rate was positive. **Table-2** provides the distribution of male and female responses for the overall DREEM scores and for the five subscales. Except students academic self perception there was no significant difference between the responses of males and females. **Table-2** Distribution of male and female responses about educational environment at SIMS.

Discussion

This study was done to determine the perceptions of undergraduate medical students of (SIMS) located at Lahore. SIMS scored 118.6 (59.3%). Although the score is comparable with the studies done in different medical institutions of Punjab[1,5] Higher and lower scores has been reported universally in different studies. Score based on DREEM as low as 102, 103, 100, and even 90 and higher scores of 130 and 132 have been reported by different investigators.[6,7,9,11]

In our study the sample was limited to the students of final year (MBBS).The reason for including final year students was that they had maximum exposure to the educational environment at the medical colleges.

It is pertinent to point out that the percentage of female students in our study is slightly higher than those reported from the medical institutions in Europe.[4,5,8] There was sharp rise in the number of female graduates in medical institutions after open merit policy system. Low score of perception of females as compared to male has also been reported in Saudi Arabia and Yemen.[7] This difference may be attributed to a change in local cultural and social trends. Although the present admission policy is safeguarding the females against gender discrimination so there is a more need to address the female students learning environment in our social cultural and religious perspective.

For SIMS, total mean score for different subscales ranged between 51.87 and 71.25%, indicating better educational environment. In this study, SIMS students rated only eight items as less than two, indicating far less environmental problems. There was more positive perception in general. Regarding the subscales the teaching was viewed positively while the teachers were moving in right direction. Academic self perception was also viewed positively.

SIMS is located in a metropolitan city of Punjab. The medical college building is purpose built. The college has its own hostels for male and females within the college campus. The college library grounds and different societies provide ample opportunities for co-curricular activities. Although the curriculum is

traditional but there is enough teaching faculty both at basic and clinical health sciences. Better infrastructure and social facilities make college environment much better for teaching and learning. Due to its location in a metropolitan city, the health authorities and politicians pay more attention in providing better services. Facilities such as a well equipped skills lab, computer lab etc make the college a better learning environment. There are a total of 18 medical colleges in the public sector of Punjab. These colleges carry almost similar population characteristics as they are under the administrative control of the Government of Punjab. Students in these medical colleges come from similar ethnic, social, cultural and educational background. The results from this study can be generalized to all pubic sectors medical colleges located in the province of Punjab.

Services Institute of Medical Sciences was purposely chosen as the college from the metropolitan city as the investigator is currently working in this college and it is easier to collect data from this college compared to other five public sector medical colleges located in the same city. All public sector medical colleges constitute a more or less homogenous population and almost similar educational environment due to similarities in administrative control and relatively homogenous student and teacher population. Several DREEM items were identified as areas of concern based their low scoring. Item no 12, 15, 21, 32, 40, 48 represent issues related to teaching methodologies and attitude of teachers. Similarly item no 31 (I have learned a lot about empathy in my profession) was scored the lowest. It might be possible that the students don't interpret the item properly or had difficulty in putting the term empathy into their cultural perspective. It is therefore required to provide easy understandable translation of some difficult terms to help the students to clearly apply them in their own individual setting.

The DREEM inventory can be used to identify strength and weakness of educational environment. Items scoring less than or equal to two might be due to traditional curriculum with content overload, authoritative attitude of teachers with the students, stressful environment and an unstructured assessment system. Moreover ineffective hidden curriculum also explains low scoring among the students regarding perceptions of atmosphere and social self perception. It also underlines the need for a careful ongoing evaluation of the learning environment.

The study provides useful information of the medical college to carefully review the findings and prepare strategies and action plans to improve the learning environment.

Conclusion

This study showed the educational environment in a college loacted in a metropolitan area. A broad based study on DREEM criteria including all the medical Colleges located in the remote and metropolitan areas of Punjab is required to extrapolate the results. In the light of the present study minimum educational standards can be developed for institutions either located in metropolitan or remote cities to ensure a healthy, positive and equitable environment. There is also a need to change the curriculum that is more responsive to the national needs of the community. For this standards should be devised regarding integration, student centered approach, community based and Problem based learning. Consideration may be given to faculty development and creation of non- threatening and congenial relationship between the teachers and students

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Original Article

Laparoscopic Total Extra-peritoneal Inguinal Hernia Repair: Our Experience at FMH

Aasim Malik, Ghulam Mustafa and Asif Iqbal

Objective: The purpose of this study is to present our experience of Laparoscopic Hernia repair.
Material and Methods: We included 50 patients in our study. Total 67 Hernia repairs were done, 33 had unilateral hernia and 17 bilateral hernias. Mean age of patients was 45 years ranging from 20 to 73 years
Results: The operating time for bilateral hernia was 30% longer than unilateral, average time 67 minutes. As we got experience the operating time gradually reduced as it was evident from last 22(44%) patients, which had 35 minutes. Two (4%) of our patients had to be converted into open due to unavoidable complications. Minor complications like anterior wall cellulitis and seroma were managed conservatively with rest and antibiotics. There were no hernia recurrence in last part of our learning curve that is in last 30(60%) patients. Overall there were 2 (4%) Recurrences occurred where the mesh was not anchored by tacs rather was fixed with polypropylene.
Conclusion: Laproscopic total extraperitoneal hernia repair offers the appropriate patient a viable alternative to open hernia surgery in terms of post operative pain, recurrence and rehabilitation, to achieve good results, adequate cases should be performed to overcome the learning curve, and the mesh should be anchored to the inguinal floor to prevent recurrences.
Key words: Laproscopic herniorrhaphy, total extraperitoneal inguinal hernia repair, inguinal hernia, laparoscopic surgery.

Introduction

The history of Hernia repair is very old and has evolved with time. Many Great Surgeons in the past played their role for the development of methods for hernia repair, Bassini, Shouldice, and Lichenstein are among those who got the maximum popularity.[1] For long time the Hernia was repaired by open method and their was no effective method to prevent recurrence, then Lichenstein Tensionfree Meshhernioplasty revolutionized the field of hernia surgery,[2] but with mesh hernioplasty, the infection remained the propelling factor for many not to use meth. In early 90s the development of Laparoscopic Surgery attracted the Surgeons to overcome this concern. Three forms of Laparoscopic hernia repair developed, namely Totally Extraperitoneal repair (TEP), Transabdominal preperitoneal repair (TAPP), and intraperitoneal onlay mesh repair (IPOM).[1-3] Gradually the Laparoscopic mesh hernia repair is gaining popularity especialy for recurrent and bilateral hernias. There are many benefits of laparoscopic surgery over open surgery, eg., earlier return to work, less pain, less rate of recurrence, less chances of recurrence and less post operative paresthesia.[4] Among all forms of laparoscopic repair, TEP is the technique where we do not enter into peritoneal cavity and there is no gut handling so there are less chances of complications related to pnemo- peritoneam and post operative ileus, also there are less chances of visceral injury and adhesion formation.[5] Due to these benefits it is a preferred form of inguinal hernia repair. There are no randomised control trials of laparoscopic hernia in our set up. We present here our experience at Fatima Memorial Hospital Lahore.

Materials and Methods

We included 50 patients in our study Total 67 Hernia repairs were done, 33 had unilateral hernia and 17 bilateral hernias. All the patients were selected from OPD of Fatima Memorial Hospital. After taking the informed consent, they were included in the study. Routine pre-operative investigations were done for Anesthesia fitness. All the patients were explained about the type of Surgery and expected outcome. All repairs were done under General Anesthesia.

Results

Mean age of patients was 45 years ranging from 20 to 73 years, 46 (92%) were male and 4 (8%) female. Mean hospital stay was 1.2±0.6 days. Among all 50 patients, 42 (84%) had primary inguinal hernias and 8 (16%) had previous hernia surgery and presented as recurrent hernia. Hernias were more on right side 32 (64%). Overall 35 (70%) patients had indirect

inguinal hernias, 12 (24%) had direct and 3 (6%) had both direct and indirect. The operating time for bilateral hernia was 30% longer than unilateral, average time 67 minutes. As we got experience the operating time gradually reduced as it was evident from last 22 (44%) patients, whichHad 35 minutes. Two (4%) of our patients had to be converted into open due to unavoidable circumstances. Minor complications like anterior wall cellulitis and seroma were managed conservatively with rest and antibiotics. There were no hernia recurrence in last part of our learning curve that is in last 30 (60%) patients. Recurrence occur in those cases where the mesh was not anchored by tacs rather was fixed with polypropylene.

Table-1: Distribution of patients according to type of hernia.

	unilateral hernia	bilateral hernia	total
	33	17	50
Primary hernia	27	15	42
Trecurrent hernia	06	02	08

Table-2: Distribution of patients according to gender and site of hernia.

	male	female	total
	46	4	50
Right inguinal hernia	29	3	32
Left inguinal hernia	17	1	18

Discussion

The Hernia surgery has become more complex over the past many years due to the introduction of new Laparoscopic techniques. Although these techniques are new but they are gaining rapid popularity, as these are alternative to open and feasible techniques especially where patient have recurrent and bilateral hernias.[3] The major problem in the laparoscopic hernia repair is the learning curve that is relatively longer than for open hernia techniques, but it is gradually decreasing due to more interest of younger surgeons and development of modern laparoscopic equipments. The morbidity related to hernia surgery has markedly reduced as it is evient from various studies.[5] Our results of laparoscopic hernia repair are farely comparable to the results reported in literature[7,8] Some tials on primary unilateral hernias shows operation time from 30 to 70 minutes and recurrence rates from 1.9% to 6%.[7,9] The advantages of laproscopic surgery are less wound complications, less postoperative pain, reduced analgesic requirements, faster resumption of normal activities. It seems that laparoscopic surgery is costly but if we consider the economic productivity of a person and overall hospital cost of hospital stay, bed occupancy and human resource utilization, then laparascopic surgery is much cost effective, even though equipment costs are higher[8] The cost of laparoscopic surgery is a bit high if we use all disposable equipments but this cost can be reduces very much if we use re-useable equipments, making it feasible for our patients. The laparoscopic hernia repair can be performed under General Anesthesia and Epidural Anethesia depending on the condition of patient and Anesthetist choice.[16] The laproscopic Surgery can be preformed for unilateral, bilateral and recurrent inginal hernias. The advantage for bilateral hernias is that it can be preformed from the same incision and for recurrent hernias we enter through normal plan, so there are less chances of complications related to recurrent surgery.[13] However, patients with primary, unilateral hernia who require rapid recovery from surgery to resume normal activities and work can also benefit from laparoscopic repair. The very low recurrence rate of 1.34% shows that, in experienced hands, the total extraperitoneal hernia repair is the procedure of choice with additional advantages for recurrent and bilateral hernias.[15] In TAPP we enter the peritoneal cavity to secure the mesh over the inguinal floor , so intestinal obstruction may result from bowel that inadvertently becomes adherent to the mesh. This is clearly an undesirable complication. TEP has the advantage of being extra peritoneal, thus minimizing the risk of visceral injury and adhesion formation, the laparoscopic approach also significantly reduces long-term morbidity of permanent paraesthesia or groin pain, compared to open surgery (5% vs. 33%) in a trial of 400 patients.[10]

Conclusion

In conclusion, laproscopic extraperitoneal hernia repair when performed by an experienced surgeon, offers the appropriate patient a viable alternative to open surgery. We recommend that initial cases should be performed under the guidance of a skilled surgeon to overcome the learning curve, and that the mesh should be anchored to the inguinal floor to prevent hernia recurrence. Reverse polyprolene stitch can be used to anchor the mesh instead of tacking device to reduce the cost of operation and prevent the occasional impingement of nerve by the tackers.

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Original Article

PHARYNGOCUTANEOUSFISTULA; ITS CAUSES AND MANAGEMENT

Muhammad Farooq Khan, Sajjid, Touseef, Javaid Iqbal and Muhammad Amjad

Objective: To study the various causes and management of Pharyngocutaneous fistula in total laryngectomy .

Material and Methods: 40 patients underwent total laryngectomy in service hospital Lahore From May 2003 to December 2014. The patients were prospectively studied regarding formation of Pharyngocutaneous fistula in the following aspects age, tumor site, stage of disease, primary repair, infection and recurrence of tumor.

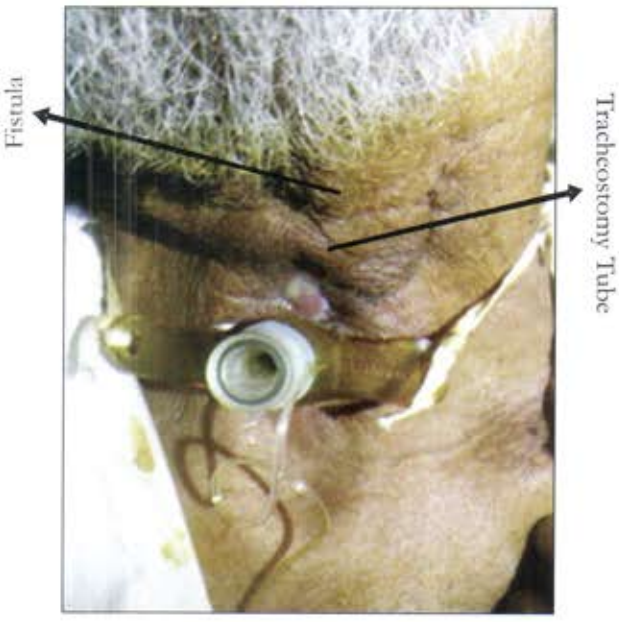
Results: Pharyngocutaneous fistula was diagnosed in 9 patients (22%) out of 40. Fistula developed in 2 patients (22%) on 3rd day due to rent in repair. 5 patients (55%) had fistulae due to infection on 8th day and 2 patients (23%) due to presence of residual tumor on 15th day. Pharyngocutaneous fistula is common complication which occurs after total laryngectomy. Three patients previously submitted to tracheostomy had fistula out of 5patients6O %(higher incidence) as compared to the 6 patients out of 35(17%) without tracheostomy. The reported incidence ofpharyngocutaneous fistula is extremely variable in literature ranging from 13% to 25% and in our series it is about 22 %.

Conclusions: Spontaneous closure is possible with proper wound care, good nutrition and antibiotics. 7 cases out of 9 in our series heeled with conservative treatment. Incidence of Pharyngocutaneous fistula formation is more in supraglottic, previously tracheostomised patients and also in advanced stage. In some patients surgical intervention is needed to close the fistula by flap. We used deltopectoral flapin two patients.

Keywords: Pharyngocutaneous fistula, causes, outcome, total laryngectomy.

Introduction

Pharyngocutaneous fistula is the most common complication following total laryngectomy and can occur immediate post-operative phase1.It creates a communication between pharynx and cervical skin around the surgical incision or less frequently the stoma of the tracheostomy. Pharyngocutaneous fistula after laryngectomy occurs when there is afailure in the pharyngeal repair resulting in a salivary leak2.pharyngeal contents usually saliva flow through the fistula emerging from the cutaneous orifice3(Fig-1).This is the demoralizing complication not only for the surgeon but also for the patient and his family. Itoccurrence leads to increased morbidity, delay in adjuvanttherapy, prolongedhospitalization and increased treatment cost4.The reported incidence ofpharyngocutaneous fistula is extremely variable in literature ranging from 13% to 25% and only few reports had a rate of less than 10%5.Many factors related to the incidence of Pharyngocutaneous fistula such as age, smoking, liver function, anemia, previousradiotherapy, previous tracheostomy, comorbidities (diabetes, malnutrions, chronic bronchitis) and even post-operative vomiting have been the topic of controvercy. The factors known to be associated with increased incidence are inadequate surgery, hematoma of the surgical wound, infection and recurrence of tumor 6.The purpose of study is to eastablish the various causes responsible for pharyngocutaneous fistula and its manangment.



Material and Methods

From May 2003 to December 2014, 40 patients underwent total laryngectomy in service hospital Lahore. The patients were prospectively studied regarding formation of Pharyngocutaneous fistula. Squmous cell carcinoma was the histopathologic diagnosis in all cases. The following aspects were considered age, tumor site primary stage, primary repair, infection and recurrence of tumor. Post-operativelywe used in these patients intravenous ceftriaxone. 1 gram bd and injection augmentin 1.2 gram I/V BD for 10 days immediately after. All pharyngeal closure was primary without flap rotation. In the cases of pharyngocutaneous fistula we took into consideration the post-operative day on which it was diagnosed, its duration, period of hospitalization, therapeutic approach and outcome. All patients received oral intake after 10th postoperative day if the fistula is not formed. After oral intake no patient developed pharyngocutaneous fistula.

Results

All patients were male and age range from40-70(colum-1). 35patients had glottis carcinoma (87% percent) and5patients had supraglottic carcinoma (13% percent).Mainly the patients were in stage-T-3 32(80% percent) and stageT-4 8patients (20% percent).Pre-operativetracheostomy was performed in 5 patients (12%) due to stridor and respiratory distress. Pharyngocutaneous fistula was diagnosed in 9 patients (22%) out of 40.Five patients previously submitted to tracheostomy had fistulain 3patients6O%(higher incidence) as compared to the 6 patients out of 35(17%) without tracheostomy (table-2). Fistula developed in 2 patients (22%) on 3rd day due to rent in repair. 5 patients (55%)had fistulaedue to infection on 8th day and 2 patients (23%) due to presence of residual tumor on 15th day(fig-2). Patients with supraglottic growth had fistula in3 patients out of 5patientsas compared to glottic growth 6patients out of 35because involvement of pharynx. There was also difference in fistula formation due to stage of disease. Three patients out of 8 patients had fistula formation in stage-4(37%) as compared to 6 patients out of 32 in stage-3 (19%).Hospital time varied from 6-8 weeks for closure of fistula. In 5 patients fistula was closed with conservative measure like injectable antibiotic, nutritional support and wound care within 6 weeks. In 2 patients we used the delto-pectoralis myocutaneous flap to repair the fistula, and in 2 patients fistula was not closed due to residual tumor.

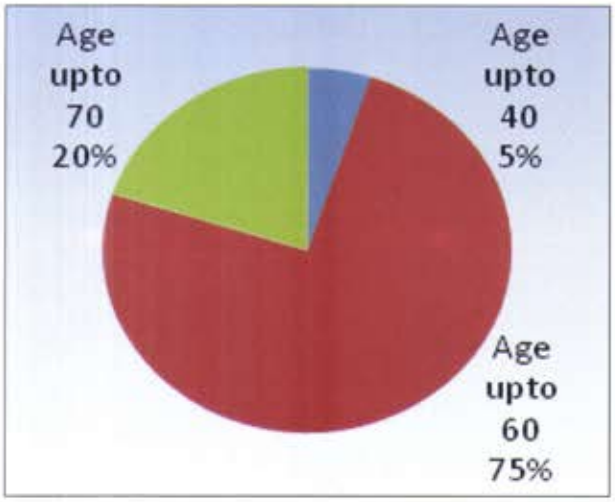


Fig-1: Sex (N 40)

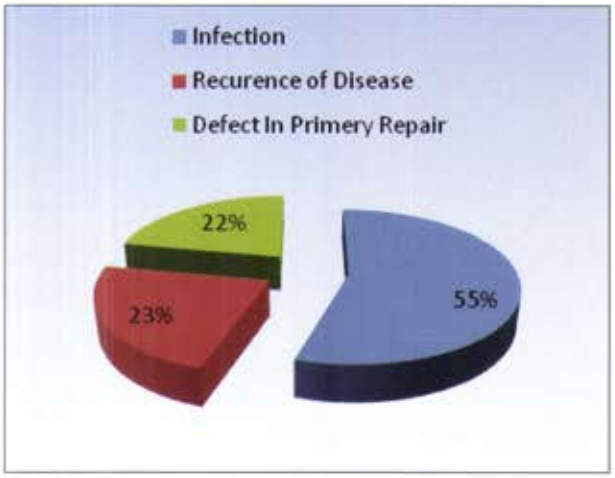


Fig-2: Sex (N 40)

Table-1: Effects of variable.

Tumor Site	Patients	Fistula Formation	%
Glottic growth	32	06	19%
Supra glottic growth	08	03	37%
Tracheostomy			
Tracheostomy	05	03	60%
Without Tracheostomy	35	06	17%
Patient stage			
Stage - T3	32	06	19%
Stage - T4	08	03	37%

Material and Methods

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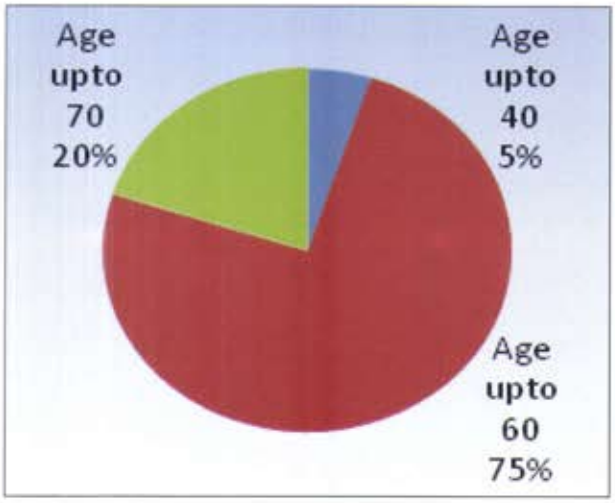

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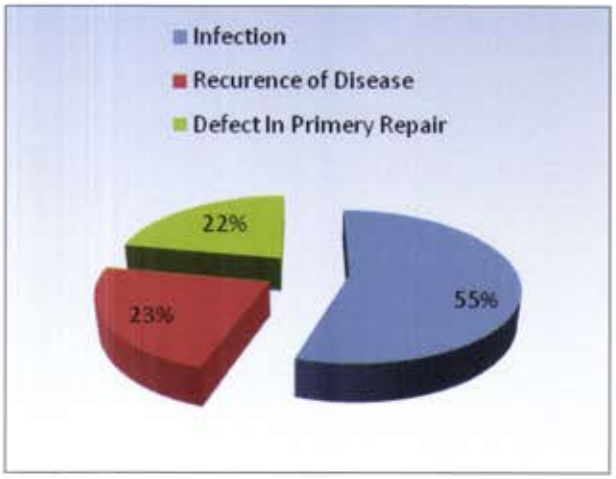

Fig-2: Sex (N 40)

Table-1: Effects of variable.

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Tracheostomy			
Tracheostomy	05	03	60%
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Patient stage			
Stage - T3	32	06	19%
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Anwwer Picture Quiz

The fallen fragment sign refers to the presence of a bone fracture fragment resting dependently in a cystic bone lesion. This finding is said to be pathognomonic for a simple (unicameral) bone cyst, following a pathologic fracture. The finding exists because a simple bone cyst is fluid filled, and therefore a bony fragment may descend through the fluid uninhibited. In contrast, the common differential lesions for a pathologic fracture through a lucent bone lesion (such as a lytic tumour, fibrous dysplasia, aneurysmal bone cyst or enchondroma) have a solid interior matrix, and therefore would not permit such downward fragment migration.

Original Article

Health Need Status: An Assessment of Community Health Status, Needs and Services

Usman Javed Iqbal, Hafiz Moeen-ud-Din, Sarmad Mushtaq, M.Umer Aftab, Sanaullah and Tahira Kanwal

Objective: The purpose of this study is to assess health status, needs and available services of the community.

Material and Methods: It was a cross sectional study of 50 participants, studying medical/public health in various institutes, belonging to different areas of Punjab. In addition to collecting basic demographic details, questions were asked to assess the health needs (in their particular community area). All the data were noted down on a short structured questionnaire. Categorical data were presented as percentages and in form of graphs while descriptive and frequency distribution was used for quantitative analyses.

Results: There were an equal proportion of males and females in our respondents. The mean age of our respondent was 23±2 years. Out of total 50 respondents only 40 had access to health facility within 5 km range. Only 25 (50%) participants responded a satisfactory health status of their family. 43 participants responded to their family disease status as chronic diseases and 07 responded as infectious diseases. Allopathic treatment was the most preferred one. 55% of the participants responded that they had sufficient access to health facilities in their areas. With respect to improvement in health needs 85% participants responded that they need improvement in health facilities in their communities.

Conclusions: A significant proportion of the participants responded to their family disease status as chronic diseases which may be due to changing patterns and exposure to certain risk factors. Awareness regarding health needs was demonstrated by only 40% of the participants in their respective communities. This information demonstrates that family health is still an important indicator of health need assessment and needs to be evaluated.

Keywords: Public health, Primary health needs, Environmental health, Health need assessment.

Introduction

Health needs assessment is a new phrase to describe the development and refinement of well established approaches to understanding the needs of a local population.[1,2] In the 19th century the first medical officers for health were responsible for assessing the needs of their local populations. The 1992 Health of the Nation initiative was a government attempt to assess national health needs and determine priorities for improving health.[3] Health needs assessment has come to mean an objective and valid method of tailoring health services; an evidence based approach to commissioning and planning health services.[4] Although health needs assessments have traditionally been undertaken by public health professionals looking at their local population, these local health needs should be paramount to all health professionals.[5] Hospitals and primary care teams should both aim to develop services to match the needs of their local populations.[6] Combining population needs assessment with personal knowledge of participants' needs may help to meet this goal. This paper is an attempt to identify the different health needs by different respondents in their respective communities and to provide a basic layout in terms of health needs assessment.

Material and Methods

It was a cross sectional study of 50 participants, studying medical/public health in various institutes, belonging to different areas of Punjab. We used convenient sampling. In addition to collecting basic demographic details, questions were asked to assess the health needs (in their particular community area) viz What is the problem? What is the size and nature of the problem? What are the types of health facilities (services) available? What does community want? Participants were asked about the presence of chronic disease and disease status of their families. All information was entered in a short structured questionnaire. Analyses were done in Statistical

Package for Social Sciences (SPSS) version 16.0 and MS Excel. Categorical data were presented as percentages and in form of graphs while descriptive and frequency distribution was used for quantitative analyses.

Results

There were an equal proportion of males and females in our respondents. The mean age of our respondent was 23±2 years.

Table-1: Basic health information.

	Frequency n=50
Distance of Facility	
< 5 km	10.0
6 to 10 km	50.0
> 10km	0.2.0
Health facility visit	
Monthly	00
6 months	00
Annually	08
Onset of symptom	42
Health Status of Family	
Statisfactory	25
Good	05
Fair	10
Poor	10
Genetic Predisposition	
Yes	23
No	27
Disease status of family	
Communicable disease	07
Chronic disease	43
Treatment you prefer	
Allopathic	41
Homecopathoc	05
Spiritual	03

Table-01 shows the basic health information obtained from our participants. There were total 50 respondents out of which only 40 had access to facility within 5 km range.

Most of the participants used to avail health facility at the onset of symptoms necessitating the need to aware these about regular health facility visits. With respect to health status of their family members only 25 participants responded to satisfactory health status of their respective families. Out of 50 only 23 participants responded that they were genetically predisposed to any disease. A significant proportion of the participants responded to their family disease status as chronic diseases which may be due to changing patterns and exposure to certain risk factors. This information demonstrates that family health is still an important indicator of health need assessment and needs to be evaluated. With respect to type of preferable treatment allopathic treatment was the most preferred one however homeopathic and spiritual ones were also preferred based on their believes and spirits.

FIG.01 shows the type of facility available in particular area. Only 40% (20) of the participant have access to hospitals in their particular area. 10% of them were having the access to health center nearby and/or private clinic. 10% had no facility available in their particular area. These results demonstrate that health policy should be evaluated in perspective of equal health care access throughout the community and every individual should have an equal chance of accessing the health facility. FIG.02 shows the overall status of health need of respective participants' communities. Only 25% of the participants responded to the available healthy environment in terms of less pollution, less overcrowding and proper sanitary conditions. 55% of the participants responded that they had sufficient access to health facilities in their areas. With respect to social & emotional support there was an equal proportion in the participants in agreement and disagreement. Poverty was considered a problem in community by 30% of the respondents. Sedentary life behaviour was sharing a major burden in most of the participants' communities. Awareness regarding health needs was demonstrated by only 40% of the participants in their respective communities. With respect to improvement

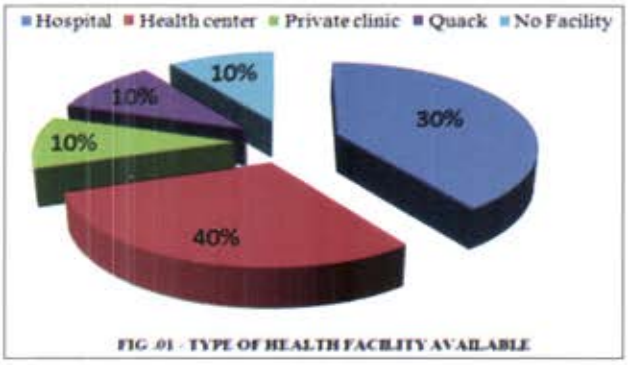

FIG .01 - TYPE OF HEALTH FACILITY AVAILABLE

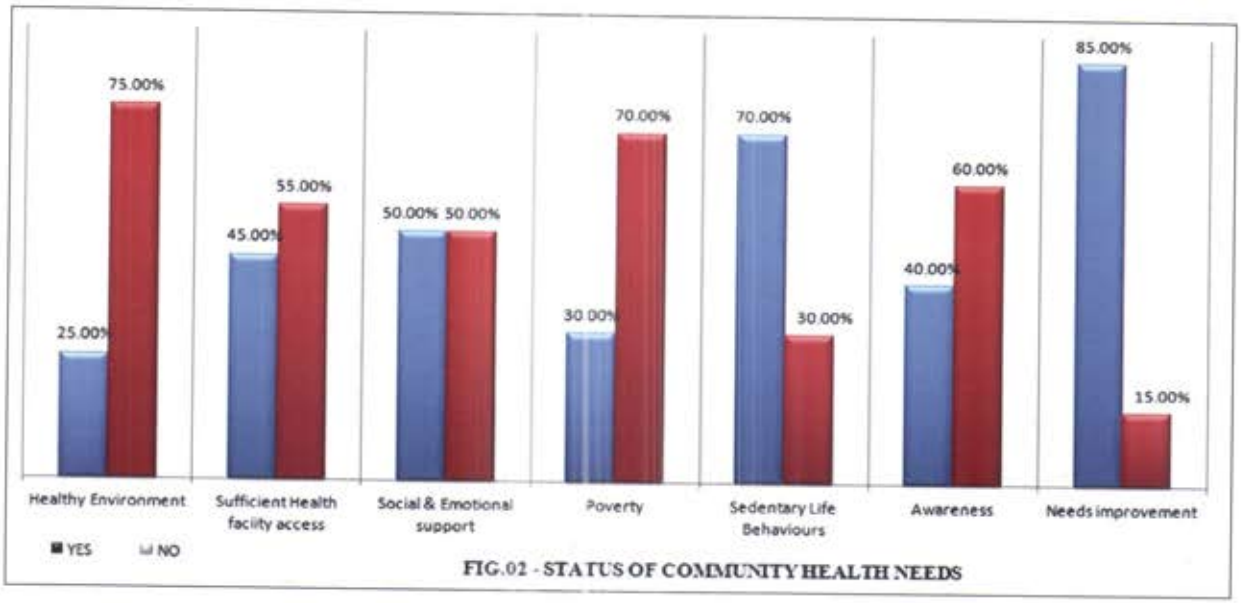

FIG.02 - STATUS OF COMMUNITY HEALTH NEEDS

in health needs most of the participants (85%) responded that they need improvement in health facilities in their communities.

Discussion

Distinguishing between individual needs and the wider needs of the community is important in the planning and provision of local health services.[8] If these needs are ignored then there is a danger of a top down approach to providing health services, which relies too heavily on what a few people perceive to be the needs of the population rather than what they actually are.[9] Doctors, sociologists, philosophers, and economists all have different views of what needs are. In recognition of the scarcity of resources available to meet these needs, health needs are often differentiated as needs, demands, and supply.[10] Health needs assessment provides a method of monitoring and promoting equity in the provision and use of health services and addressing inequalities in health.[11]

Health needs assessment provides a method of monitoring and promoting equity in the provision and use of health services and addressing inequalities in health.[11] Evidence does not support routine health assessments in otherwise healthy people.[12] The importance of assessing health needs rather than reacting to health demands is widely recognized, and there are many examples of needs assessment in primary and secondary care.[13,14]

There is no easy, quick fix recipe for health needs assessment. Different topics will require different approaches.[15] These may involve a combination of qualitative and quantitative research methods to collect original information, or adapting and transferring what is already known or available.[15] The stimulus for these assessments is often the personal interest of an individual or the availability of new funding for the development of health services. However, assessments should also be prompted by the importance of the health problem (in terms of frequency, impact, or cost), the occurrence of critical incidents (the death of a patient/subject turned away because the intensive care unit is full), evidence of effectiveness of an intervention, or publication of new research findings about the burden of a disease.

Conclusion

The report establishes a need to assess the value of public health and health promotion using constructs beyond individual health and beyond the World Health Organization's original definition of health that dates back to the middle of the last century. Notwithsta- nding advances in community capacity building through community based participatory research and parallel efforts such as empowerment evaluation, stakeholder evaluation and assessment of community competence, the application of these constructs within health promotion and public health programs apparently have not given sufficient prominence to the intrinsic value of building community capacity through the *process* of developing programs.

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Original Article

Assessment of Safety and Complications of Circumcision performed by Plastibell

Ghulam Mustafa, Aasim Malik, Junaid Khan Lodhi

Objective: To assess the safety and complications of circumcision performed by plastibell technique.

Material and Methods: A descriptive prospective study was done in a Khair-un-Nisa, an affiliated Hospital of FMH College of Medicine&Dentistry Shadman Lahore. Data was collected from all the case done between January 2012 to December 2013. A total of 120 cases registered and results were analyzed to see the safety of procedure.

Results: A total of 120 cases registered for the study. Mean age of neonates and infants was 14 ±2 days. Circumcision was done with plastibell in all case. There was no major complication noted at operation time or at follow up. 13(%) cases developed minor complication like penile edema and redness. 5(%) got platibell slipped downward and 2 upward at shaft. In most case plastibell dropped at 5-7 days. 12 case plastibell dropped after 10 days.

Conclusions: It is an easy, quick and safe technique. Outcome of this procedure is encouraging and there is no extra care needed for this procedure.

Keywords: Circumcision, plastibell, pediatrics, complications

Introduction

The history of circumcision dates back the history of mankind. It is the most common surgery performed worldwide in pediatric age group. The circumcision is compulsory practice in Islam as a ritual of the prophet Ibrahim. It is usually done in 1st week of life, although time of circumcision varies in different areas. During World War II tropical diseases of foreskin in American servicemen led to an increase in the trend towards routine neonatal circumcision. Throughout the world, millions of male neonates and infants undergo circumcision for religious, cultural, social and medical reasons[1].

There are many methods of doing circumcision like bone-cutter, Plastibell, Gomco clamp and open method. Each has its own merits and demerits. Among these the Plastibell and Gomco clamp are considered as most safe and effective methods. In Pakistan Circumcision has long been performed by barbers in 1st week of life, using shaving knife without the use of antiseptic technique and without caring the bleeding. Now due to increasing awareness and knowledge the circumcisions are increasingly performed by surgeons. Most surgeons prefer the Plastibell as it has additional advantage of having less and practically no blood loss and can be done safely in babies who have some bleeding disorders. The Gomco clamp method is equally safe as regards the injury to Glans, but it cannot be done in infants having some bleeding disorders and there is slightly more bleeding with this method.

Although thought a minor procedure, circumcision is after all a surgical procedure and has its own complications. These complications range from minor bleeding to severe life threatening necrotizing fasciatitis[2]. To prevent these complication one should follow the same aseptic surgical techniques as in any other major surgical procedure. If we talk about complications of plastibell, these are bleeding, infection, excessive prepuce skin loss, inadequate skin removal. Proximal migration of bell, Bell retention and Glans prolapse.[3,4] Circumcision can be performed under local anesthesia in dorsal penile/ ring block or general anesthesia in older children.[6] With plastibell technique under local anesthesia, it takes 10-15 minutes to complete the whole procedure. Lignocaine 1% or 2% plain is usually used. Dorsal penile block is usually used, but it's better to use penile ring block for better pain control[5]. Plastibell is available in different sizes ranging from 1.1 to 1.7. Appropriate size is selected according to the age and size of Glans. Size calculation devices are also available. It is very important to select appropriate size, as extra large bell can migrate proximal and because impaction over penile shaft and under size can lead to Glans necrosis and urinary retention[7]. We conducted this study to see the effectiveness of plastibell technique in our setup.

Material and Methods

A prospective descriptive study was done. We included 120 patients in our study presented in a khair-un-Nisa Hospital, an affiliated hospital patients in our study presented in a khair-un-Nisa Hospital, an affiliated hospital of FMH College of Medicine and Dentistry Lahore, from January 2012 to December 2013. We included babies upto one year of life in study. Babies having other medical conditions like Hypospadias, Jaundice and skin infections were excluded. An informed written consent was taken. Data maintained in preformed proforma. Data analyzed using SPSS 18. Procedure

Results

A total of 120 cases registered for the study. Mean age of neonates and infants was 12 ±2 days. Circumcision was done with plastibell in all case. There was no major complication noted at operation time or at follow up. 13(%) cases developed minor complication like penile edema and redness. 5(%) got platibell slipped downward and 2 upward at shaft. In most case plastibell dropped at 5-7 days. 12 case plastibell dropped after 10 days. **Table 1**

Table-1: Complications of Plastibell Circumcision (n=120

Complications	no
Celleulitis	13
Primary Hemorrhage	1
Secondary Hemorrhage	0
Proximal migration of ring	2
Penile shaft injury	0
Health facility visit	0

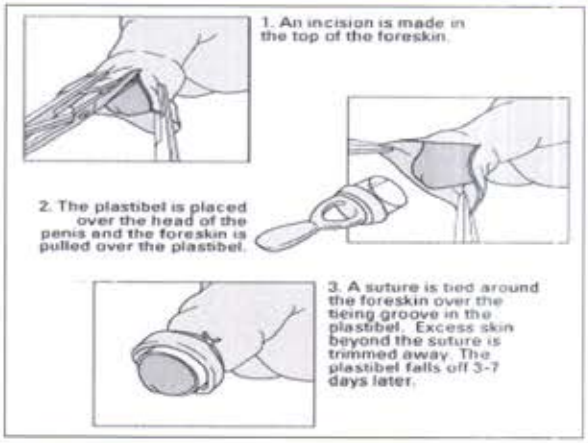

Fig-1: Demonstration of performing circumcision by Plastibell.

Discussion

Circumcision is done by various methods but plastibell technique is thought to be safe, easy and with less complications. The reported rate of complication is 2.3-18.5%[8] the most common complications are bleeding, penile shaft edema, infection, proximal migration of bell and delayed separation of bell. Some serious but rare complications like glans injury, necrotizing fasciitis and shaft injury are also reported in literature.[9]

In our study the complications encountered were minor bleeding, penile shaft edema early ligature slippage and proximal migration of bell. These complications are minor and are almost same as reported in other literature. There was no serious complication like glans injury or fasciitis etc encountered in our study. The reasons were correct selection of bell size, prophylactic use of antibiotics and careful handing while doing procedure. The time of separation of the bell is different in different age group and also dependent on the size of bell. The reported in different studies is 10 days[8] while the average time in our study was 07 days. The reason for this difference is the nature of skin of different babies, material of ligature used, length of foreskin left and edema of penile shaft. As regards the pain control for circumcision, most commonly used agent is 1-2% plain lignocaine[5]. Our practice was to use 1-2ml 2% plain lignocaine as penile block followed by oral ibuprofen for 03 days. In the past it has been done without any pharmacological agent by barbers, some studies shows behavioral changes in children whose circumcision were done either without analgesia or inadequate analgesia. Other agents used for pain control are EMLA (Eutectic mixture of local anesthetics) cream, lignocaine-prilocaine combination. Although the safety of bone-cutter well claimed by some experienced surgeons and they support its use[10] but at the same time its magnitude of complications is quite high if mishandled and potential injuries to Glans of penis is not uncommon.[11]

Conclusion

The plastibell circumcision is a good procedure with minimum complications and early recovery. The traditional bone cutter method, although performed frequently is vulnerable for glans injury. So if performed with care it is the best method of circumcision especially at early neonatal age.

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Original Article

Outcome of Subacromial Steroid Injection in Management of Shoulder Impingement Syndrome

Khawar Tufail Ahmad, Mumtaz Hussain, Irfan Ahmed, Sohail Razzaq and Mohammad Tasneem

Objective: To evaluate the outcome of subacromial steroid injection in subacromial impingement syndrome in our racial group population.

Material and Methods: 150 cases having clinical diagnosis of SIS of age >16 years were included from outpatient department of Orthopedic Surgery, Services Hospital Lahore during 12-03-09 to 14-12-09. Patient having constant grade A (less than 70 constant score) and grade B (70-79 constant score) were included while those having full thickness tears of rotator cuff, internal rotation contracture, previous open shoulder surgery or gleno-humeral instability were excluded from study. Methyl Prednisolone Acetate 40 mgs along with 5 ml of 0.5 % Bupivacaine injection were given administered in subacromial space to all patients under aseptic conditions. Patients were follow-up at one week; three weeks, and six weeks and outcome was assessed by Constant scoring system. Improvement was labeled by the achievement of grade C (80-89), D (90-100) on constant score.

Results: The mean age was 50 years ± 2.50 (range 35-65), 38.7% were of 30-40 years, 38.7% were 40-50 years and 22.7 % were >50 years of age. 134 (89.3%) were male patients and male to female ratio was 9:1. Right shoulder involvement was 76.7% and left sided was 22.7%. Outcome at first week was grade A in 14.0%, grade B in 84.7% and grade C in 1.3%. Outcome at third week was grade B in 10.0%, grade C in 88% and grade D in 2.0% and there was no patient in grade A. Outcome at end of six week was grade A in 1.3%, grade B in 13.3% and grade C in 53.3% and grade D in 31.3%. Final outcome was 85.3% improvement (CSS grade C and D) and 14.7% non-improvement (CSS grade A and B).

Conclusion: Subacromial steroid injection shows early decrease in morbidity of the patient. It has low complication rate and is cost effective.

Keywords: Subacromial impingement syndrome, Subacromial injection.

Introduction

Shoulder pain is the 3rd most common cause of musculoskeletal disorders after low back pain and cervical pain having a prevalence of 11.7%. The annual incidence of shoulder disorder in western population varies from 7-25% western general population. It is estimated that annual incidence is 25 cases per 1000 population in persons aged 42-46 years and 21% in aged 70 or older. The shoulder impingement is without any racial predominance and 1:1 male to female ratio and is more common after age of 40 yrs[1,2] Shoulder impingement syndrome (SIS) is the term used to describe pain in subacromial space when the humerus is elevated or internally rotated which results from the repetitive overhead activities leading to irritation of tendons and bursa from repeated contact with the under surface of the acromion.[1,3] The causes of shoulder impingement syndrome can be extrinsic factors like traumatic tears in tendons, overuse injuries from repetitive lifting, pushing, pulling or throwing and intrinsic factors including poor blood supply normal attrition or degeneration with aging and calcific invasion of tendons.[4]

Patient's with this syndrome typically present with a history of dull pain in the anterior aspect of the shoulder that is exacerbated by activities performed when the shoulder is in a forward flexed, adducted and internally rotated position .Shoulder impingement syndrome remains a diagnosis of exclusion based on the findings of the physical examination.[5,6] The Ultrasound and MRI are more specific but are used in selective cases.[7] Initial therapy of subacromial impingement syndrome is non surgical like modification of activities, analgesic non-steroid anti-inflammatory drugs, cryotherapy, ultrasound, electromagnetic radiation, corticosteroid injection and physiotherapy. The goals of non-operative treatment are to decrease subacromial inflammation, to allow healing of the compromised

Rotator cuff, and to restore satisfactory function to the painful shoulder. Anti-inflammatory medication and physical-therapy regimen have a 67% satisfactory result.[8] A meta-analysis of randomised controlled trials shows that subacromial injections of corticosteroids are more effective than NSAID for improvement for rotator cuff tendonitis[9] Subacromial injections of corticosteroids and xylocaine had 91% satisfactory improvement in amount of pain and range of motion.[10]

It is probably still required to assess the effectiveness and complications associated with the different methods of treating Subacromial impingement syndrome especially in our set up so that a better treatment option will be adopted for managing SIS.

Material and Methods

The study was approved by the institutional ethical review board. 150 patients fulfilling inclusion and exclusion criteria were included in the study from outpatient department. Demographic information including name, age, sex, occupation and address was recorded after taking informed consent. Methyl Prednisolone Acetate 40 mgs along with 5 ml of 0.5 % Bupivacaine injection were given administered in subacromial space to all patients under aseptic conditions. Patients were discharged on same day and were called for follow-up at one week; three weeks, and six weeks for assessment of outcome. Outcome was assessed by Constant scoring system. Improvement was labeled at the end of 6 weeks with the achievement of grade III (80-89), IV (90-100) on constant score.

All collected information was analyzed by using SPSS version 12.0. Variables in demography like age are presented as mean and standard deviation; variables like sex are presented as percentage. Improvement /no improvement at the end of six weeks are also presented by frequency and percentage.

Results

The mean age for the sample was 50 years ± 2.50, with the youngest patient being 35 years of age and oldest 65 years. 58 patients (38.7%) were of 30-40 years age group, 58 patients (38.7%) from 40-50 years age group, 34 patients (22.7) % from >50 years age group. The major bulk of patients were from 30-40 years. Also majority of patients were males 134 patients (89.3%) and male to female ratio of 9:1. Right shoulder impingement syndrome was present in 115 patients (76.7%) and left sided was in 34 (22.7%) patients.

Outcome at the end of first week was grade A in 21 (14.0%) patients, grade B in 127 (84.7%) patients and grade C in 2 (1.3%) patients. At the end of third week 15 (10.0%) patients had grade B and 132 (88%) patients had grade C and grade D in 3 (2.0%) patients and there was no patient in grade A. Outcome at the end of six week was grade A in 2 (1.3%) patients; grade B in 20 (13.3%) patients and grade C in 80 (53.3%) patients and grade D in 47 (31.3%) patients.

On comparing final outcome in terms of improvement and non-improvement, 128 patients (85.3%) have improvement and 22 patients (14.7%) have non-improvement.

Discussion

Three current accepted approaches to treatment of impingement syndrome include conservative management, arthroscopic surgery, and open surgical interventions. Based on the effectiveness of noninvasive therapies, a period of conservative management is recommended for at least 612 months [11]. Subacromial injection of steroid for impingement syndrome is as effective as other conservative measures.[8,12]

My study sample consisted of 150 patients with Subacromial impingement syndrome. All the patents were having painful shoulder for more than 2 months and were taking NSAIDS. A meta-analysis of randomized controlled trials shows that subacromial injections of corticosteroids are more effective than NSAID for improvement for rotator cuff tendonitis. high dose (50 mg of prednisone or more) may be better than lower doses for subacromial corticosteroid injection for rotator cuff tendonitis.[9] The mean age for the sample was 50 years (Mean± 2.50), with the youngest patient being 35 years of age and oldest, 65 years. A total of 238 shoulders in 209 patients, with regular follow-up, were enrolled in a study by Chung-Ming Yu et al. In this study mean patient age was 51 years (range 31-72 years).[10] Blair et al. treated nineteen patients with to the corticosteroid injection, the mean age was fifty-six years (range, 32-80 years), in his study group.[13]

The corticosteroid group comprised nineteen patients, four men and fifteen women in a study done by Blair et al.[13] In a study done by Chung-Ming Yu among two hundred and thirty eight shoulders in 209 patients 52 were males and 157 were females.[10] In my study the male to female ratio of the patients was 9:1, with dominance of male patients in number i.e. 134 patients (89.3%) and 16 female patients (10.7%).The male population is prone to develop subacromial

impingement syndrome because of their active lifestyle in our setup.

Fourteen dominant and five non-dominant shoulders were involved in the study done by Blair et al.[13] The Right sided shoulder was involved in 116 patients (77.3%) and left side was involved in 34 patients (22.7%) in my study, which shows that population with dominant right shoulder developed this painful condition in increasing ratio. My study was comparable to the study of Blair et al., as the dominant right shoulder was involved more in my study population also, although the study population of Blair et al. was very small as compared to my study population.

Two hundred and thirty eight shoulders in 209 patients received subacromial steroid injection in a study done by Chung-Ming Yu et al.[10] One hundred and ninety one shoulders (168 patients) achieved improvement immediately after the first injection. The results of my study regarding functional outcome at 1st week were different as compared to the above study in terms of constant score as only a few patients showed satisfactory outcome.

Forty-seven shoulders in 41 patients received a second injection two week after the first injection by Chung-Ming Yu at al. Of these 47 shoulders, 25 shoulders (23 patients) improved after the second injection. In my study 132 patients were in Grade C and 3 patients were in Grade D, showed satisfactory improvement after 3 weeks according to constant score.

The final results at 4 weeks of follow up by Chung-Ming Yu et al. showed that 216 shoulders (91%; 191 patients) achieved improvement according to constant score. The mean improvements in the active range of motion of forward elevation, abduction, internal rotation and external rotation were 56°, 48°, 18° and 22°, respectively[10]

The final results of my study are comparable to the study of Chung-Ming. 128 patients i.e. (85.3%) showed improvement according to constant score. Similar results were obtained by the study comprising of 19 patients done by Blair et. al. In Sixteen patients, the pain had decreased after the treatment. The active range of external rotation and forward flexion had improved in twelve patients and regard to improvement in the Performance of activities of daily living there was not significant improvement. In this study the sample size was very small and mean duration of follow-up was thirty-three weeks.[13]

Regarding the limitations of my study, long term follow up was required and it also failed to provide the information on the recurrence of symptoms of impingement. In addition, we were unable to determine if patients who receive subacromial injection of corticosteroids are at increased risk for tears of the rotator cuff or, alternatively, if such injections decrease subacromial scarring, which may in turn decrease the risk of tears of the rotator cuff.

Our results are also consistent with RAO et al which states that the differences in pre- and postoperative scores for pain, function, active forward flexion, strength of forward flexion and overall patient satisfaction were improved with p-values < 0.01 in for each. This was an overall improvement in 88% cases (5).

Conclusion

Subacromial decompression is an effective treatment for shoulder impingement syndrome. Accurate diagnosis, careful patient selection and appropriate surgical intervention results in a successful outcome and return to normal activities in majority of patients. Local injection application is easy to apply and results in rapid relief of pain for the patient and reduces morbidity quickly.

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Case Report

HYPERIMMUNOGLOBULIN E (JOB'S) SYNDROME:

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Abstract: Hyperimmunoglobulin E syndrome is a primary immunodeficiency disease characterized by markedly high titers of serum immunoglobulin E (IgE), chronic eczema, recurrent staphylococcal infections and pneumatoceles. There are no clinical tools for diagnosis and definitive laboratory investigation. Variability of presentation makes it easy to confuse the diagnosis with severe atopy or other rare immunodeficiencies. We report case of a 9-year-old boy with recurrent eczema, mycotic infection of the nails and moderately elevated IgE levels.

Keywords: Hyperimmunoglobulin E syndrome, chronic eczema, pneumatoceles

Introduction

Hyperimmunoglobulin E (HIES) or Job's syndrome is a rare congenital immune disorder characterized by the classic triad of high serum IgE levels, severe eczematous dermatitis, and recurrent skin and lung infections.[1] While the prevalence of disease is currently estimated at <1 in 1 million,[2] the true prevalence is likely higher since HIES can be difficult to diagnose. Most cases are autosomal dominant, but both autosomal recessive forms and sporadic cases have been described. The autosomal dominant hyper-IgE syndrome is associated with a cluster of facial, dental, skeletal, and connective tissue abnormalities which are not observed in the recessive type.[3] The autosomal recessive disease is characterized by severe recurrent fungal and viral infections, neurologic abnormalities and upper and lower respiratory tract infections.[4] Eosinophilia is more common in autosomal recessive hyper-IgE syndrome than in autosomal dominant hyper-IgE syndrome.

Case Report

A 9yr old boy presented to us with history of mycotic infections of nails in both hands and feet and abscess of the right big toe since 2 weeks. He was being given oral antibiotics prescribed by local general practitioners for the two weeks, but without improvement. His past medical history revealed recurrent episodes of skin infections and onchomycosis, which occurred 2-3 times per year and history of skin debridement for skin abscesses ; one at the age of 2 yrs and other at the age of 5 yrs. All the infections were associated with minimal trauma and resolved with the use of adequate antibiotics after a period of 2-3 weeks. The patient's birth history was insignificant, and development milestones were within normal limits. He did not have any other medical disease, including allergy or respiratory diseases, such as bronchial asthma or allergic rhinitis. There is history of eczematous dermatitis and allergic rhinitis in two siblings and eczema in another male cousin.

Physical examination revealed normal facial appearance. In addition to many previous healed scars and granulation tissue, there were fungal infections of the nails (Fig 1) with an abscess on the right big toe and furuncles in the left external auditory meatus. Laboratory investigations showed mild leukocytosis = 2720/μL, with eosinophilia =12%, an elevated C-reactive protein level = 2.86 mg/dL and markedly raised serum IgE level =5500IU/ml (normal range=0-380IU/ml). The result of pus culture revealed staphylococcal aureus.

Discussion

Hyper-IgE syndrome is a multisystem disorder that affects the dentition, skeleton, connective tissue and the immune system.[2] Before detailed immunologic and broad clinical characteristics of the syndrome were appreciated, Davis et al in 1966 assigned the term "Job's syndrome" to this disease, in reference to the Biblical character whose body was stricken with boils.[5] There is marked variation in the constellation of symptoms and signs that constitute the diagnosis. Because there are no useful criteria for diagnosis and no definitive laboratory tools for investigation, clinical diagnosis of hyper-IgE syndrome has relied primarily on the following characteristics: elevated serum IgE levels; eczematoid rashes; and unusual, severe, recurrent infections such as skin abscesses, candidiasis, and pneumatocele-forming pneumonias, in the absence of any

other underlying defect in the immune system.[2] Our patient was also diagnosed in this manner. The clinical and laboratory hallmarks of hyper-IgE syndrome often become apparent in infancy, but the diagnosis may not be made until Childhood or adulthood. In addition to the common observation of coarse facial features, chronic Dermatitis, mucocutaneous fungal infection, skin infection of the head and neck regions, and peripheral blood eosinophilia are the common initial presentations. Skin manifestations include staphylococcal furuncles, cold abscesses, and cellulitis. Among them, cold abscesses are occasionally seen and are pathognomic to hyper-IgE syndrome, but not essential to the diagnosis. Cold abscesses are neither hot nor tender, and they are not associated with systemic symptoms, fever, or other signs of local or generalized inflammation.[5] Our patient suffered from recurrent superficial infections compatible with the features of hyper-IgE syndrome. Possible findings in later childhood and adulthood include recurrent staphylococcal pneumonia with the formation of persistent pneumatoceles; chronic and recurrent sinus, ear, and eye infection; and occasional septic arthritis and osteomyelitis. With age, osteopenia and consequent pathologic fractures may occur, leading to further debilitation.[7] It has been suggested that staphylococcal pneumonias with pneumatocele, a coarse facial appearance, a broad nasal bridge, facial asymmetry, and hemihypertrophy in a boy with hyperimmunoglobulin E syndrome formation are essential for diagnosis, but they are not always present in otherwise typical presentations.[2] Our patient did not develop any episode of pneumonia, probably due to his younger age. The immunologic features of hyper-IgE syndrome are variable despite primary immunodeficiency. They include markedly elevated IgE levels; positive immediate wheal-and-flare responses to a variety of food, inhalant, bacterial, and fungal antigens; marked eosinophilia; impaired anamnestic (IgG) antibody responses and poor responses to neoantigen.[8]

Our patient showed a moderately elevated IgE level and marked eosinophilia. The mainstay of therapy is prophylactic antibiotic, primarily to prevent staphylococcal infection. During episodes of disseminated or invasive bacterial or fungal infection, an aggressive parenteral antibiotic with supportive care is mandatory. Other therapies reported to be effective, but not prospectively studied, include high-dose intravenous gamma-globulin[9], cyclosporin A, and interferon. Topical antibiotic preparations and good skin care measures may also be beneficial.

Conclusion

In conclusion, hyper-IgE syndrome is a rare primary immunodeficiency of unknown etiology affecting multiple systems. It has variable features, and there is no single laboratory or clinical tool for investigation. A clinician, especially a pediatrician, dealing with a patient with a peculiar appearance and recurrent infection, should keep in mind the possibility of the disorder. Treatment is supportive and prophylactic skin care and antibiotics are most helpful in management. Recent advances in the understanding of the genetics and immunology of this condition may elucidate the responsible gene, genes or chromosomal deletion responsible for this condition. This in turn will provide new hope for treatment.

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Medical News

NEW HOPE FOR DENGUE VACCINE

Worldwide, there are around 390 million cases of dengue a year - a potentially deadly mosquito-borne virus. But according to a new study published in the journal Science, researchers have made a discovery that could lead to a vaccine and treatments for the condition. Study co-author Dr. James Crowe Jr., of Vanderbilt University in Nashville, TN, and colleagues have uncovered a human antibody that prevented dengue in mouse models by stopping the virus from binding to target cells.

"Scientists in the antibody discovery group of the Vanderbilt Vaccine Center continue to make great strides in developing novel antiviral drugs, such as this human antibody that not only kills dengue virus but also prevents enhanced dengue disease," says Dr. Crowe Jr.

Dengue is transmitted by a bite from a mosquito - most commonly the Aedes aegypti mosquito - that is infected with one of four dengue virus serotypes, known as DENV1-4.

Symptoms of dengue include fever, severe headache, joint pain, muscle and bone pain, severe pain behind the eyes and mild bleeding - such as nose bleed. A more severe form of the virus is known as dengue hemorrhagic fever (DHF), characterized by prolonged fever, abdominal pain, persistent vomiting, bleeding and breathing problems.

According to the World Health Organization (WHO), more than 22,000 people worldwide die from dengue each year, the majority of whom are children.

At present, there are no vaccines or specific medications for dengue. Symptoms are usually treated with painkillers such as acetaminophen, and fluid replacement therapy may be effective if the virus is identified early enough.

2D22 antibody prevented dengue infection in mouse models. Though researchers are working hard to find prevention and treatment strategies for dengue, they face challenges. Dengue's four serotypes consist of different antigens, which means antibodies that are effective against one serotype may not be effective against others.

Dr. Crowe and colleagues note that such antibodies can also "cross-react," leading to infection with a second serotype and raising the risk of DHF.

In previous research, the team created human monoclonal antibodies (HMAbs) that could bind to the antigenic section of the "epitope," or viral envelope, of the DENV2 serotype. The epitope is the part of an antigen that is recognized by immune cells.

For this latest study, the team used cryo-electron microscopy to freeze samples of the HMAbs, allowing them to see how the antibodies bind to the epitopes at an "atomic level."

The researchers identified an HMAb called 2D22 that was able to bind to a variety of epitope proteins of the DENV2 serotype, and in mouse models, the antibody stopped the virus from fusing to its target cell, preventing infection.

What is more, the researchers found the 2D22 antibody also prevented cross-reaction of other antibodies, which reduced the risk of infection with a second dengue serotype.

Based on their findings, the team concludes that "the epitope defined by HMAb 2D22 is a potential target for vaccines and therapeutics."

In December 2014, another study reported by Medical News Today showed promise for a dengue vaccine. Published in Nature Immunology, the study detailed the discovery of an antibody that can neutralize all four dengue serotypes.

The researchers of that study - including investigators from the University of Melbourne in Australia - say their findings may open the door to a universal vaccine for the virus.

Courtesy: Medical News Today