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Original Research Paper

General Surgery

CLINICAL STUDY AND MANAGEMENT OF INGUINOSCROTAL AND SCROTAL SWELLINGS IN CHILDREN BELOW 12 YEARS OF AGE.

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ABSTRACT

INTRODUCTION:-Inguino-scrotal and scrotal swellings are noticed either by the parent or by a physician when the child is straining or crying. The causes of the swellings have different origin and require variability in their management. As infants and children cannot express themselves like adults, they are more prone to complications.

METHODS:-This clinical study comprises of , all children (below 12 years of age) with the complaint of swelling or accidental finding during examination of a swelling in the inguino-scrotal and scrotal region. All the data was collected and summed up in the proforma.

RESULTS:-The highest incidence according to age is between 4- 6yrs. In this study, birth history term children are more prone to these swellings followed by preterm which is different from the previous studies.

CONCLUSION:-This study will help us to diagnose the swellings with the help of their clinical findings and plan further management and conclude the further prognosis of these swelling pre-operatively which will reduce the complications and death rate caused due the swelling.

KEYWORDS : Congenital hernia, hydrocele, patent processusvaginalis, undescended testis.

INTRODUCTION

Inguino-scrotal and scrotal swellings most probably has been a disease ever since mankind has evolved. Papyrus Ebers of EGYPT described it in 1550 B.C.

"This is a swelling of the coverings of his abdomen, an illness which I will treat. It is the heat of his bladder in front of his belly which creates it. Falling to the ground, it returns likewise. You should heat it to imprison it in his belly"[1].

Inguino-scrotal and scrotal swellings are the commonest anomalies in infancy and childhood throughout the world [2]. No age, rank, sex or condition of life is exempted from it, the rich, the poor, the lazy and the laborious are equally liable to it. It can range from a simple condition like lipoma to a condition which causes serious complication such as obstruction, incarceration, strangulation or gangrene of the bowel demanding a precise diagnostic workup and further management [3].

Hernia is derived from a Latin word for "RUPTURE" [4]. The failure of the processusvaginalis to close normally is the cause for inguino-scrotal and scrotal swelling [3,4]. The incidence of inguinal hernia which is almost all indirect and congenital in nature is about 3-5% in term infants and 9-11% in pre-term infants, boys: girls ratio is 6:1 and side right: left: bilateral is 60%: 30% : 10% [5].In case of inguinal hernia in girls it is of congenital origin and there is a need for wide-spread information about female inguinal hernia to bring about early detection and treatment of the cause [6].

This study is justified by its frequency and importance and aims to corroborate or refute previous teachings and myths aboutpediatricinguino-scrotal and scrotal swellings. Hence this study will help us in understanding the distribution, presentation and complication which will help us provide a better management of this condition.

MATERIAL AND METHODS;

OBJECTIVES:

- To study inguino-scrotal and scrotal swellings in children according to age, sex and side wise distribution.
- To study the correlation of birth history [pre-term/ term / post-term] with inguino-scrotal and scrotal swelling.
- To study the comparison between the intra-operative findings and ultra-sonography findings.

METHODOLOGY :

This prospective clinical random study was carried out at Dr.D.Y.Patil Hospital Kadamwadi, Kolhapur between may 2015 to may 2017on all patients below 12 years of age including both males and females presenting with complaints of inguino-scrotal and scrotal swellings associated with symptoms or found accidentally during general examination.All the registered patients were examined by first taking a proper history from the attendant (mother / father/ guardian), each child was then examined clinically and the findings of the swelling were noted in the proforma after which the systemic examination was done. Then they underwent a series of routine hematological investigationnecessary for pre-surgical work up. After which USG of abdomen and pelvis {for all patients} and USG of scrotum (only in males) was carried out. On the basis of these reports the patient were planned for the type of surgery to be done. Consent for the planned surgery prior to the surgery was taken. Intra operative findings were mentionedto correlate with USG findings. All patients were managed post operatively and then discharged once fit.

RESULTS:-

This clinical study includes 153 cases that were studied over a period of 24 months, from May 2015 to May 2017.

I. 1. AGE DISTRIBUTION :-

In the present series the youngest patient was 11 months old and the oldest was around 11 years of age. Majority of patients 26.14% (n = 40) were in the age group of 4-6 years of age. And the $P < 0.26$ but is not significant.

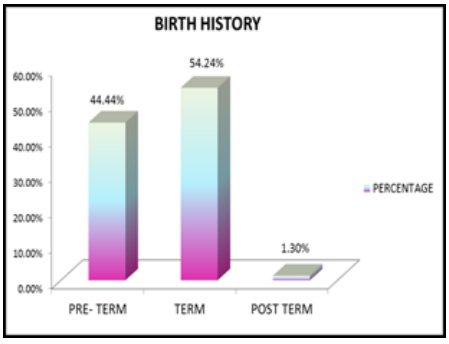
II. 2. SEX DISTRIBUTION :-

Out of 153 patients 90.19% (n=138) patients were male and 9.80% (n=15) were female, and the male: female ratio 9: 1and its P < 0.54 which is notsignificant. In this series, the percentage of males is very high as compared to females between 0-10 years ,but between 10-12 years the percentage of females i.e. 26.66% (n= 4) is more because the swellings become clinically more evident and the awareness about swellings in females also increases which is missed at an early age by the patient's relatives.

3. SIDE WISE DISTRIBUTION :-

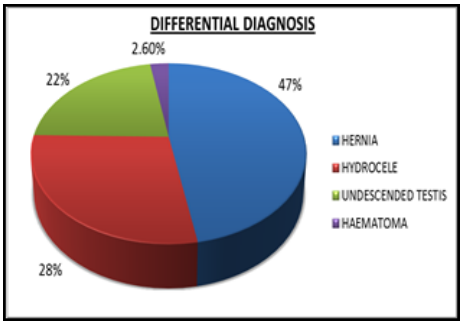
This study clearly shows that right sided swellings are dominant in most of the age groups, while bilateral are few as sometimes they don't present together or sometimes are missed during examination. In age group 8-10 years (n=11) left side swelling are more compared to right side (n=8).Out of the 153 cases, right side 58.16% (n=89) is more as compared to left sided 34.64% (n=53) while bilateral sided swellings are the least that is 7.18% (n=11).

4. BIRTH HISTORY:-



In this study overall term pregnancy 54.24% (n=83) is the highest followed by pre-term history 44.44% (n=68) and post term 1.30% (n= 2). It's P <0.33 which is insignificant.

5. DIFFERENTIAL DIAGNOSIS FOR INGUINO SCROTAL SWELLINGS:-



Out of 153 patients who were studied 47% (n=72) patients suffered from hernia, followed by 28% (n= 43) patients had hydrocele and 22% (n= 34) patients had undescended testis 2.60% (n= 4) had scrotal haematoma post scrotal trauma.

6. CORRELATION BETWEEN ULTRA SONOGRAPHY FINDINGS AND INTRA OPERATIVE FINDINGS :-

The correlation between the USG findings and intra operative finding has proved that there is similarity in the results in almost 93% (n= 143) of cases and its sensitivity is very high and hence USG is the diagnostic test of choice.

7. DEMOGRAPHIC PRESENTATION OF INGUINO-SCROTAL HERNIAS :-

Demographic chart of hernia clearly shows a demographic presentation of hernia showing male 80.05% (n= 58) are more effected than female 19.44% (n= 14) and there is predominance on the right side 52.77% (n=38) compared to left 41.66% (n=30) and bilateral 5.55% (n= 4).

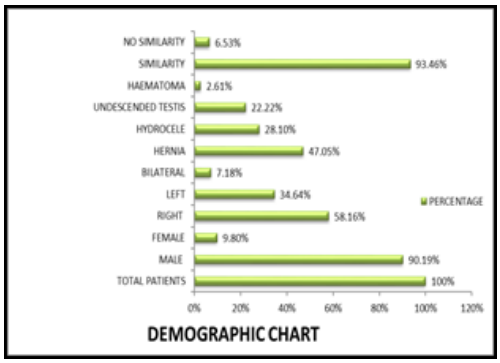
8. DEMOGRAPHIC PRESENTATION OF HYDROCELE :

The demographic chart clearly shows that hydrocele is a male specific disease which predominance on the right side 51.16% (n=22) as compared to left side 41.86% (n=18) and bilateral hydrocele 6.97% (n= 3).

9. DEMOGRAPHIC PRESENTATION OF UNDESCENDED TESTIS:-

This demographic chart clearly represents that undescended testis is a male 100% (n= 34) specific disease which is dominant on the right side 73.52 % (n= 25) compared to the left testis 20.58% (n = 7) which is less and bilateral occurs very rarely 5.88% (n= 2).

10. DEMOGRAPHIC PRESENTATION OF INGUINO-SCROTALAND SCROTAL SWELLINGS:-



DISCUSSION:

This study of 153 cases of inguino-scrotal and scrotal swellingswas compared with available literature and other studies to corroborate or refute the findings with the previous studies.

I. AGE WISE DISTRIBUTION :-

In the present series the youngest patient was 11 months old and the oldest was around 11 years of age. Majority of patients in the present series were in the age group of 4-6 years of age which was 26.14 % (n= 40) and least is in the age group of 0-2 years 11.76 % (n= 18). Comparing the present study between 3- 7 years of age i.e. 54.90% to Okuribido et al[7]. 47.4% the percentage is approximately the same for the same age group, while in comparison to Wright JE et al.[8] 87% the percentage is drastically low and this may be because that study has also considered the patients of 0-3 years of age and secondly because :-

- These swellings are asymptomatic.
- The children are inexpressive about the swellings at such an early age.
- Because of lack of awareness among the parents which lead to late detection of the swellings.

Kolhapur is surrounded by many villages from where most of the patients come to our hospital and as there is less awareness regarding these swellings, they are missed at an early stage and diagnosed a bit late only when the complications set in.

II. SEX DISTRIBUTION :-

In all studies of Inguino-scrotal and scrotal swellings there has been a male preponderance, even in this series the percentage of males 90.19% (n= 138) is very high as compared to females 9.80% (n= 15). But between 10-12 years the percentage of females 26.66% is more compared to males 12.31% as the awareness of inguino-scrotal swellings in females increases and as the swelling becomes more clinically evident which is missed at the early age. Female inguinal swellings are very little studied till date, but now due to modernization there is an increase in the physical activities and weight bearing activities at a very young age among the females, in cities due to gyming and other strenuous sports activities and in villages helping in farming and other household activities there is an increase in female inguinal hernias, but due to the lack of awareness

among the population regarding hernias there is a very late detection of these swellings. Hence the need to spread awareness regarding inguinal swellings in females and inguino-scrotal and scrotal swellings in males is essential.As compared to the previous studies the ratio of Grosfeld JL et al[9] and Ralph M Larsen et al[10] which is 7:1 and 11:1 respectively the present study findings of 9:1 are also quiet similar to their findings.

III. SIDE WISE DISTRIBUTION :-

Childhood inguinal hernias are generally more predominant on the right side this has been attributed to the delay in descent of the right testis. This study clearly shows that right sided swellings 58.16% (n= 89) are dominant in most of the age groups as compared to left sided swellings 34.64% (n= 53) and bilateral hernia 7.18% (n= 11). Studies have also proved that if patients presents with a left side inguino-scrotal or scrotal swelling at an early stage the chances of the child developing a right sided inguino-scrotal and scrotal swellings is also high. Therefore in such cases laproscopicherniotomy is preferred over open herniotomy as contra lateral exploration becomes easy and if required can be operated in the same sitting . When compared to Michel Gilbert et al[11] and Muhammad T et al[12] our study is similar to the results of the above two studies and there is no significant difference between the three results. Right: left: bilateral is 8 : 4.8 : 1 in the present study.

IV. BIRTH HISTORY :-

In this study patients with term birth history are more as compared to pre-term birth history which is different from the previous studies. Previous studies state that pre-term child is more prone to inguino-scrotal swellings as compared to term and post-term children according to Gray.S.W.Skandandalakis et al[13]and Davis N et al[13] The figures in the present study do not correlate with other studies mentioned in case of term history. This can be due to uneducated parents as they are unaware of the birth history of the child or cannot recollect their last menopausal date which leads to a miss calculation of the days or come to the assumption that the baby had been delivered at the proper time.

V. PRE OPERATIVE SONOGRAPHIC EVALUATION :-

In this study of 153 patient each patient underwent a pre-operative USG of the inguinal and scrotal region. These pre-operative findings were compared to the intra-operative finding and there was 93% (n= 143) similarity while 7 % (n=10) no similarity between the two results.

CONCLUSION

- Inguino-scrotal and scrotal swellings remain one of the most common congenital anomaly observed by us in children below 12 years of age.
- The congenital inguino-scrotal and scrotal swellings are generally dominant among the males, while in side wise distribution on the right side and in the age group its maximum between 4-6 years.
- Early diagnosis and specific treatment of these swellings is the mainstay if the complications are to be avoided.
- Patent processusvaginalis is the main cause for most of the inguino-scrotal and scrotal swellings.
- A USG is the best tool for diagnosis of inguino-scrotal and scrotal swellings and has a very high sensitivity rate and is cost effective also.
- Surgery is the gold standard treatment for inguino-scrotal and scrotal swellings and should be done as soon as possible after diagnosis.
- In cases of hernia the treatment should be at the earliest and we shouldn't wait till the complications set in, but in case of undescended testis within 1 year of diagnosis and in case of hydrocele the child can be given a chance up to the age of 2 years, as it is the time period for delayed closure of the processusvaginalis but if persists or presents in later stage of life should be operated as it doesn't resolve by itself.
- This study has lead to a significant conclusion that the diagnosis is mostly delayed or an accidental finding during routine examination, which is due to the lack of health awareness among the parents /grandparents /guardians as well teachers at school. This study makes it clear that it is the need of the day to spread awareness about inguino-scrotal and scrotal swellings through awareness programme, so as to bring about early detection of these swellings so that it can be treated before its complications set in.
- Through this study we suggest the concerned authority to start awareness programmes in villages and small towns with the help of health officers, as we have started the same in our hospital by conducting awareness programme in the nearby villages which will help in early detection of these swelling and prevent the harsh effects of the complication on the children.

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