

A clinical study and management of inguino-scrotal swellings in children

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Abstract

Background: Inguino-scrotal swellings are one of the commonest anomalies in infancy and childhood worldwide with inguinal hernia and hydrocele being most common.

Methods: This study was carried out in the department of pediatric surgery, Rajarajeshwari Medical College and Hospital, Bangalore, Karnataka. The cases were studied prospectively for a period of about 60 months (Oct 2011 to September 2016) and all children below 12 years of age presenting to us with inguino-scrotal swellings were included in this study. The gathered information was analyzed in terms of age, diagnosis, procedure carried out and outcome.

Results: Amongst 200 children under the age of 12 years, 9 female children presented to us with inguinal swelling, 69 cases of hydrocele, 93 cases of inguinal hernia, and 38 cases of undescended testis were documented. All cases underwent a simple herniotomy for hernia and hydrocele, orchidopexy was done for undescended testis. The length of hospital stay ranged from two to four days with a mean of 2.46 days. 11 children in the study were documented to have short-term complications all of which were recognized in the hospital only and managed with good results.

Conclusion: Hernia and hydrocele in children are considered congenital and are diagnosed clinically (history and examination). Indirect inguinal hernias are overwhelmingly more common than other groin hernias. Open herniotomy is the operation of choice for inguinal hernias in children. These hernias can also be repaired laparoscopically.

Keywords: Inguino-scrotal, hydrocele, hernia.

Introduction

Inguino-scrotal swellings are frequent and the most common condition treated by the pediatric surgeons worldwide. Inguino-scrotal swellings are a common condition in young boys, with a wide range of diseases. The causes of swellings have varied origin and require variability in their management.

Patent processes vaginalis proved to be the basic cause of inguino-scrotal swellings in children. Inguino-scrotal swellings are one of the commonest anomalies in infancy and childhood worldwide with inguinal hernia and hydrocele being most common¹.

Planned elective surgeries when required at the earliest after diagnosis, is recommended to avoid complications.

Materials and Methods

This study was carried out in the department of pediatric surgery, Rajarajeshwari Medical College & Hospital, Bangalore, Karnataka. The cases were studied prospectively for a period of about 60 months (Oct 2011 to September 2016) and all children below 12 years of age presenting to us with inguino-scrotal swellings were included in this study. A detailed history, general and systemic examination followed by specific examination of the groin was done. All relevant investigations for surgery under general anesthesia were done. Herniotomy was the commonest procedure performed. Post operatively patients were followed up for a period of 3 weeks to 3 months. The gathered information was analyzed in terms of age, diagnosis, procedure carried out and the outcome.

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Results

The results of the present study that was carried out in the department of pediatric surgery, Rajarajeswari Medical College & Hospital, Bangalore, Karnataka, were as follows. Amongst 200 children under the age of 12 years, 9 female children presented to us with inguinal swelling, 69 cases of hydrocele, 93 cases of inguinal hernia, and 38 cases of undescended testis were documented. Maximum children (39%) with inguino scrotal swellings in our series were in the age group of 3-6 years. Incidence of hernia as cause of inguino-scrotal swelling was hydrocele - 34.5%, hernia 46.5% and undescended testis 19%. In all age groups, the commonest cause of an inguino-scrotal swelling was a hernia. Overall ratio of right to left for unilateral inguino-scrotal swellings was 3.2:1. Bilateral inguino-scrotal swellings formed only 3.6% of all cases. 3 cases (1.7% of all cases) of complicated inguinal hernia presented to us as irreducible hernia, without any signs of strangulation. All cases underwent a simple herniotomy for hernia and hydrocele, orchidopexy was done for undescended testis. The length of hospital stay ranged from two to four days with a mean of 2.46 days. 11 children in the study were documented to have short-term complications, all of which were recognized in the hospital only and managed with good results. One patient had recurrence of inguinal hernia, which was noted shortly after the surgery during his stay in the hospital, re-operated and cured without any sequel.

Discussion

Inguino-scrotal swellings are frequent and the most common condition treated by the pediatric surgeons worldwide. Inguino-scrotal swellings are a common condition in young boys, with a wide range of diseases. Only a careful history taking and examination is usually enough to arrive at the diagnosis. The array of inguinal and scrotal disorders includes hernia, hydrocele, undescended testis, torsion of the testis or appendix testis, and rarely testicular tumors¹.

The inguinal hernia is the most prevalent of all inguinal and scrotal disorders and hernia is a sac of tissue that protrudes through the abdominal lining. Usually, the sac closes and disappears before birth, if the sac does not close and persists as processes vaginalis typically filled with fluid or tissue resulting in hernia. The reported incidence ranges from 1-5%. Sixty percent of hernias occur on the right side. Premature infants are at increased risk for inguinal hernia, with incidence rates of 2% in females and

7-30% in males. Approximately 5% of all males develop a hernia during their lifetime². Hernias are usually noticed first by the parents as a small bulge in the lower abdomen or sometimes an enlarged scrotum in boys. Hernias need to be recognized early and operated promptly before any complication like incarceration develops. In an elective setting, simple herniotomy is usually all that is required to treat the condition, which in better setting can mean to be a day care procedure only. Complications resulting from delayed elective surgery can make the surgery quite demanding not only in terms of delineating the anatomy but also result in prolonged anesthesia, tissue damage and postoperative infections³. In case of incarcerated inguinal hernia an attempt should be made to manually reduce in children, especially in infants, under sedation and analgesia. If manual reduction is successful, plan to operate on the child on the next available elective list, preferably within the next 72 hours because the edema would have subsided by then. If manual reduction fails, the child must be operated on immediately after the necessary preoperative preparations⁴.

Hydrocele similar to a hernia is simply a sac of water within tunica vaginalis. Hydrocele can wait till the child is two years of age, a hydrocele that is large and is quite tense may need early surgical intervention; else should be operated only if they persist beyond the age of two years or if they appear de novo after that age. The surgical procedure is similar to herniotomy, using a one inch incision, with disconnection of the sac, drainage of the hydrocele fluid and suture the remaining tissue⁵.

Undescended testis occurs when the testicle fails to travel down into the scrotum by the time of birth. At birth, four out of every one hundred males will have an undescended testis; however by one year of age, three of these four will have descended into a satisfactory position. Although an undescended testis is not a health risk, surgery in form of orchidopexy should be performed to relocate the testis into the scrotum to allow normal development to occur. This procedure is similar to that of the hernia, with a small groin incision. Hernias often result simultaneously with undescended testes. The testis is placed into the scrotum by lengthening the tissue and blood vessels that supply the testis. Occasionally, more than one surgery is required⁶.

Epididymo orchitis presents clinically with onset which may be insidious; fever, vomiting, urinary symptoms; rare in pre-pubertal boys, unless underlying

genitourinary anomaly, when associated with urinary tract infection. On examination there is a red, tender, swollen hemi scrotum; tenderness most marked postero lateral to testis. Pyuria may be present. These children should be managed with antibiotics once a suitable urine sample has been sent, young infants or systemically unwell children should be admitted for intra venous antibiotics, scrotal support and analgesics. The process is slow to resolve and the patient may have several days of gradually subsiding discomfort and scrotal swelling.

Idiopathic scrotal edema presents as rapid onset of painless but notable edema and can be secondary to diseases that cause generalized edema resulting in edema of scrotum, extending into perineum and penis; may be bilateral, testes is not tender and usually resolves spontaneously over a couple of days. No intervention is required.

Testicular torsion present as sudden onset testicular pain and swelling; occasionally nausea, vomiting. Most common in the 4 to 11 year old age group and often occurs after moderate activity. Early surgical consultation is vital, as delay in scrotal exploration and detorsion of a torqued testis will result in testicular infarction within 8-12 hours. Occasionally we come across antenatal torsion testis in a newborn may present with painless, smooth, testicular enlargement.

Varicocele is a collection of abnormally enlarged spermatic cord veins, found in teenage boys, mostly on the left. Mass of varicose veins ("bag of worms") is found above testicle, non-tender, more prominent when standing; surgically treated with laparoscopic varicocelectomy.

Testicular tumors are rare in childhood and usually appear with slowly growing, painless masses. They are often mistaken for a hernia and accidentally found at surgery. Surgery is used to remove the mass through a groin incision. Further treatment depends on the type of tumor and its extent of spread.

Conclusion

Hernia and hydrocele in children are considered congenital and are diagnosed clinically (history and examination). Indirect inguinal hernias are overwhelmingly more common than other groin hernias. Open herniotomy is the operation of choice for inguinal hernias in children. These hernias can also be repaired laparoscopically.

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