Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 21s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Clinical Presentation and Management of Inguinoscrotal Swelling in Children

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Cite this paper as: Kinkar Mahanta**,** Rocket Chandra Brahma**,** Satya Bikash Doley**,** Lakhyajyoti Patgiri**,** Rosidul Sarkar**,** Papu Sakachep, (2025). Clinical Presentation and Management of Inguinoscrotal Swelling in Children. *Journal of Neonatal Surgery*, 14 (21s), 171-175.

ABSTRACT

BACKGROUND: One of the most frequent categories of diseases observed in clinical surgical practice is inguinoscrotal disease. The Pathognomic clinical features are infrequently present in patients; hence the diagnostic problem is difficult in these cases.

The commonest cause of inguinoscrotal swelling in children is persistent processes vaginalis. Males are affected 3-6 times more than females. According to their morphology and vascularity, investigations like colour doppler ultrasonography with a high-frequency transducer can assist characterise intra-scrotal swellings. So, it is possible to distinguish between swellings that need immediate surgery and those that may be treated conservatively.

METHOD: We retrospectively reviewed hospital register records of 100 patients who underwent operative procedure for inguinoscrotal swelling conducted in the department of paediatric surgery at Assam Medical College & Hospital for a period of 2 years from June 2021 to May 2023.

RESULTS: A total of 100 cases were selected of which 61 cases were diagnosed as inguinal hernia, 23cases were hydrocele, 9 cases of undescended testis, 4 cases of communicating hydrocele with hernia and 3 cases of encysted hydrocele of chord. Age group of 0-1 year has the highest number of cases of inguinal hernia (21.3%). 10 cases and 9 cases presented in the age groups 4-5 years and 1-2 years respectively. The treatment consists of operative intervention in all the 100 cases of inguinoscrotal swelling, out of which herniotomy (64%) was the most common procedure performed followed by ligation of sac in cases of hydrocele.

CONCLUSION: Inguinal hernias and hydroceles in children continue to be the most prevalent congenital defects seen by surgeons. The key to preventing complications with an inguinal hernia is early identification and treatment.

Keyword: *Inguinoscrotal Swelling, Inguinal Hernia, Hydrocele, persistent processes vaginalis, undescended testis, encysted hydrocele of chord.*

INTRODUCTION:

One of the most frequent categories of diseases observed in clinical surgical practice is inguinoscrotal disease.[1] The pathognomic clinical features are infrequently present in patients, hence the diagnostic problem is difficult in these cases.[2] The commonest cause of inguinoscrotal swelling in children is persistent processes vaginalis. Males are affected 3-6 times more than females.[3] According to their morphology and vascularity, investigations like colour doppler ultrasonography with a high-frequency transducer can assist characterise intra-scrotal swellings. So, it is possible to distinguish between swellings that need immediate surgery and those that may be treated conservatively.[2] The incidence of inguinal hernia is associated with many conditions like epispadias, hypospadias, ambiguous genitalia, cryptorchidism, bladder extropy, prune belly syndrome, etc.[4] Incidence in preterm neonates is approximately 30%.[5] A child has varying types of hydroceles depending on the degree and site of obliteration.[6] Only the hydrocele which stays beyond the age of two years and those which are associated with inguinal hernia require operative management. The rest of them resolve spontaneously with age.[7,8] Parents are usually the first person to notice the swelling or bulge in the inguinal region when changing a diaper or bathing or while the child is crying or straining. Childhood inguinal hernias are more common on the right side due to delay in the descent the of right testis. Regarding sex prevalence, males are more commonly affected. But in the case of bilateral hernias, the incidence is more in females. In many of these cases, clinical examination may suffice to obtain a definite diagnosis, but ultrasonography can play an important role when the diagnosis is inconclusive.[9]

AIM: To study the clinical presentation and management of inguinoscrotal swelling in children.

OBJECTIVE: To assess the outcome of operative management and its complications.

MATERIALS AND METHODS: The present study was retrospectively conducted at Assam Medical College and Hospital, Dibrugarh from June 2021 to May 2023.
The study was on "Clinical presentation and management of inguinoscrotal swelling in children".

PLACE OF STUDY: Assam Medical College and Hospital, Dibrugarh, Assam

DURATION OF STUDY: 2 Years.

TYPE OF STUDY: Retrospective Hospital-based Observational Study.

STUDY POPULATION: Cases admitted with a diagnosis of inguinoscrotal swelling.

SAMPLE SIZE: Considering 95% confidence interval with absolute precision of 10% and hydrocele to be the most common finding among the inguinoscrotal swelling in children (62%)[10]. Sample size is calculated and rounded off to 100.

INCLUSION CRITERIA

1. Cases admitted with a diagnosis of inguinoscrotal swelling
2. Age below 12 years.
3. Both male and female.

EXCLUSION CRITERIA

1. Cases who did not underwent operative procedure.
2. Cases with acute scrotal swelling like testicular torsion, epididymal-orchitis, funiculitis, and lymphadenitis.

ETHICAL CLEARANCE: The study has been conducted after approval from the Institutional Ethical Committee(H) of Assam Medical College and Hospital, Dibrugarh, and with written consent from each patient after explaining the study procedure to them in their language.

METHODS: Data was collected from the MRD department regarding: clinical findings, laboratory tests, Radiological finding [ultrasonography]. Confirmed diagnosis was made with respect to the records of the OT note and/or histopathological examination reports.

STATISTICAL ANALYSIS:
The data collected were tabulated in Microsoft Excel Worksheet and computer-based analysis was performed using the Statistical Product and service solutions (SPSS) 20.0 software (SPSS, Chicago, Illinois, USA) and Microsoft Excel 2010. The categorical variables were summarized as proportions and percentages.

RESULTS AND DISCUSSION:
A total of 100 cases were selected of which 61 cases were diagnosed as inguinal hernia, 23 cases were hydrocele, 9 cases of undescended testis, 4 cases of communicating hydrocele with hernia and 3 cases of encysted hydrocele of chord.

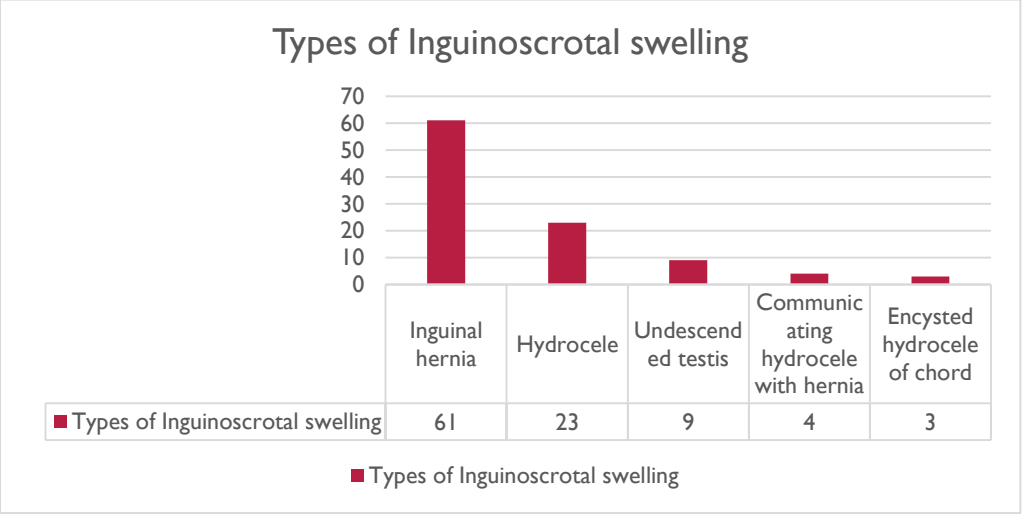

Figure no. 1

In the present study, the proportion of inguinal hernia was found to be 61%, hydrocele to be 23% and undescended testis to be 9%. **Koranga H. et al.**[9] **(2018)** concluded that inguinal hernia and hydrocele in children remain one of the most common congenital anomalies. **Raju SRH**[11] **(2020)** concluded that inguinal hernia is a common congenital condition in children.

In the present study of 100 cases, the youngest patient was 1month 10 days old and the oldest was 11years. The maximum number of patients were in the age between 0-1year, comprising of 14 cases. The least number of patients were observed in the age group of 11-12 years, comprising of 2 cases.

Age Group (years)	No. of cases	Percentage
0-1	01	4.3%
1-2	02	8.7%
2-3	06	26.08%
3-4	02	8.7%
4-5	01	4.3%
5-6	01	4.3%
6-7	03	13.04%
7-8	02	8.7%
8-9	02	8.7%
9-10	01	4.3%
10-11	02	8.7%
11-12	0	0%
Total	**23**	**100%**

Figure no. 2

Ravikumar V. et al[12] **(2013)** found that inguinal hernia in the study was common in the 1-5 years age group. **Chang S. et al.**[13]**(2016)** found in their study that the peak incidence of inguinal hernia was at 0 years of age for males and 5 years of age for females.

In our study of 100 children with inguinoscrotal swelling, there were 88 male and 12 female. The ratio being 7:1. The results in the present study is similar with those of most of the previous studies. **Burgmeier C. et al.**[14] **(2015)** found that term boys (58.6%) and girls (58.2%) predominantly presented with right-sided inguinal hernia**. Kumar R. et al.**[15] **(2018)** found that inguinal hernia was most common among male children (92%), giving a ratio of M: F=11.5:1

In our study, out of 100 cases of inguinoscrotal swelling is more on the right side (58%) than left side (35%). **Koranga H. et al.**[9] **(2018)** carried out a study in 40 cases of inguinoscrotal swelling in children and found that 24 cases were right sided, 12 left sided and 4 bilateral. **Wani DI et al.**[16] **(2020)** studied 31 cases of hydrocele and found with right side is to left side ratio of 3:1.

In the present series of 100 cases, 52 swellings were first noticed by mother, 20 by grandmother, 9 by father, 10 by doctors and remaining 9 were first noticed by nurses, siblings and relatives. **Youssef A.**[17] **(2015)** reported that out of 135 male patient, incarcerated hernia was found in 4% cases. **Kumar R. et al.**[15] **(2018)** found that incarceration was rare in their study cases, overall rate being 4% this showed that incarceration is more common on right side.

In the present series of 12 cases of female inguinal hernia, 9 cases (75%) have bilateral sac. **Palmer L.**[18] **(2013)** recommended routinely exploration of the contralateral side. **Shalaby R. et al.**[19] **(2020)** found in their study that among the female patient who underwent laparoscopic hernia repair, maximum number of contralateral hernia was found in female.

In our present study, all the cases underwent surgery and 11 cases had post operative scrotal oedema, 2 cases had wound hematoma and 3 cases had wound infection. Follow up was done after discharge at 2 weeks, 1 month and 6 months. Recurrence was seen during the follow up. Though due to short period of study late follow up could not be done. **Kumar R. et al.**[15] **(2018)** reported that out 50 children who underwent surgery, only 2 cases had post operative infection. **Raju SRH**[11] **(2020)** the complication rate for repair of inguinal hernias and hydrocele in children ranges from 1.7 to 8%. The wound infection rate is 1% to 2% and recurrence rate is less than 1%.

In this study, children and infants were given general anesthesia for operative intervention. Simple herniotomy was done for all hernia cases except for wide deep ring and repair was done for with silk. In cases who underwent emergency surgery, hernia sac was opened and examined for viability In this present series the surgical treatment was given to all the 100 patients, 64 cases underwent herniotomy, 23 cases underwent ligation of sac,orchidopexy in 9 cases, in female bilateral exploration of inguinal region was done and out of 12 cases, 9 female patients had contralateral inguinal sac. **Ravikumar V. et al**[12] **(2013)** found that out of 50 children with inguinal hernia, two cases had irreducible inguinal hernia. **Ivashchuk G. et al**[20] **(2014)** reported that amyand's hernia has a rare incidence.

CONCLUSION:

Inguinal hernias and hydroceles in children continue to be the most prevalent congenital defects seen by surgeons. The key to preventing complications with an inguinal hernia is early identification and treatment. It has been found that the right side has a higher prevalence of inguinal hernias in children due to the right testis's delayed descent. Males are more frequently impacted by sex prevalence than females. However, the incidence of bilateral hernias is higher in females. Inguinal hernia and hydrocele can be linked to congenital defects including undescended testes and hypospadias. When repairing a hernia in undescended testis, orchidopexy should be performed. When changing a diaper or bathing a crying or fussy kid, mothers are typically the first to detect the enlargement or bulge in the inguinal region. A risk of incarceration or strangulation exists with an inguinal hernia, so it should be treated as soon as possible following diagnosis. Post operative complications are usually rare following elective operation whereas minor complications do occur after emergency operation. Recurrence is usually rare if operated by experienced surgeons. A risk of incarceration or strangulation exists with an inguinal hernia, so it should be treated as soon as possible following diagnosis. The preferred procedure for treating inguinal hernias in children is an open herniotomy. Laparoscopic surgery can also be used to treat these hernias. Herniotomy is safe and effective operation in children.

REFERENCES

1. Rubenstein RA, Dogra VS, Seftel AD, Resnick MI. Benign intrascrotal lesions. J Urol. 2004;171(5):1765–72.
2. Kaplan GW, King LR. Acute scrotal swelling in children. J Urol. 1970;104(1):219-23.
3. Rowe MI, Marchildon MB. Inguinal hernia and hydrocele in infants and children. Surg Clin North Am. 1981;61(5):1137–45.
4. Grosfeld JL, Cooney DR. Inguinal hernia after ventriculoperitoneal shunt for hydrocephalus. J Pediatr Surg. 1974;9(3):311–5.
5. Harper RG, Garcia A, Sia C. Inguinal Hernia: A Common Problem of Premature Infants Weighing 1,000 Grams or Less at Birth. Pediatrics. 1975 Jul 1;56(1):112–5.
6. Skoog SJ, Conlin MJ. Pediatric hernias and hydroceles. The urologist's perspective. Urol Clin North Am. 1995 Feb 1;22(1):119–30.
7. Davenport M. ABC of general paediatric surgery. Inguinal hernia, hydrocele, and the undescended testis. BMJ. 1996 Mar 2;312(7030):564–7.
8. Kapur P, Caty MG, Glick PL. Pediatric hernias and hydroceles. Pediatr Clin North Am. 1998;45(4):773–89.
9. Koranga H, Chandrasekaran R. A study of clinical evaluation and management of inguinoscrotal swelling in paediatric age group. Int Surg J. 2018;5(6):2097.
10. Wani DI, Prabhakar A, Sharma S, Nafees R. Inguinoscrotal swellings in childhood: a clinico-diagnostic approach to differential diagnosis. Int J Res Med Sci. 2020 Aug 26;8(9):3235.
11. SRH DR. To study the differential diagnosis of inguino-scrotal swelling in children. Int J Surg Sci. 2020;4(1):311–3.
12. Ravikumar V, Rajshankar S, Kumar HRS, Nagendra Gowda MR. A Clinical Study on the Management of Inguinal Hernias in Children on the General Surgical Practice. J Clin Diagn Res. 2013 Jan 1;7(1):144–7.
13. Chang SJ, Chen JYC, Hsu CK, Chuang FC, Yang SSD. The incidence of inguinal hernia and associated risk factors of incarceration in pediatric inguinal hernia: a nation-wide longitudinal population-based study. Hernia. 2016 Aug 1;20(4)
14. Burgmeier C, Dreyhaupt J, Schier F. Gender-related differences of inguinal hernia and asymptomatic patent processus vaginalis in term and preterm infants. J Pediatr Surg. 2015 Mar 1;50(3):478–80.

15. Kumar R, Prasad VS. A study of inguinal hernia in children. Int Surg J. 2018 Jun 25;5(7):2558–62.
16. Wani DI, Prabhakar A, Sharma S, Nafees R. Inguinoscrotal swellings in childhood: a clinico-diagnostic approach to differential diagnosis. Int J Res Med Sci. 2020 Aug 26;8(9):3235.
17. Youssef AT. Inguinoscrotal and inguinolabial swelling in infancy: Role of ultrasound. African J Urol. 2015;21(4):201–9.
18. Palmer LS. Hernias and hydroceles. Pediatr Rev. 2013;34(10):457–64.
19. Shalaby R, Negm MA. Laparoscopic snaring of hernia sac for inguinal hernia in girls: a preliminary study. Acta Sci Paediatr. 2020;3(3):48-52.
20. Ivashchuk G, Cesmebasi A, Sorenson EP, Blaak C, Tubbs SR, Loukas M. Amyand's hernia: a review. Med Sci Monit. 2014 Jan 28;20:140–6.