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Original Research Article

Inguinal Hernia in Female Paediatric Patients: Experience at a District Hospital in India

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Abstract:

Background: Female paediatric inguinal hernia, although less common compared to males, presents an important surgical concern, especially in peripheral hospitals where resources may be limited. Early diagnosis is crucial due to risks of incarceration and involvement of reproductive organs.

Objective: This study is aimed to document the age, side (right, left, bilateral), and complication rates (recurrence, wound infection) among female paediatric inguinal hernia patients treated at a peripheral hospital in Jammu and Kashmir.

Methods: A retrospective review was conducted including 22 female paediatric patients (aged >3years–14 years) who were operated for inguinal hernia from January 2018 to October 2023. Age groups, laterality, and postoperative complications were analyzed. All patients underwent open herniotomyand high ligation of sac and were followed for at least 2 years postoperatively.

Results: Of 22 cases, the majority (63.6%) were aged 3–5 years 27.3% were 6–10 years, and 9% were 11–14 years. Right-sided hernias comprised 68.2% of cases, left-sided 22.7%, and bilateral 9.1%. Postoperative complications included recurrence in 4.5% and wound infection in 9%. These findings highlight a predominance of early childhood presentation and right-sided hernias, with a low but noteworthy complication rate.

Conclusion: Female paediatric inguinal hernias in this study predominantly affected younger age children and were right-sided. Prompt surgical management resulted in a low incidence of complications. The findings underscore the need for early detection and referral to prevent morbidity, especially in regions with constrained healthcare resources.

Keywords: Inguinal Hernia, Female, Paediatric, Jammu and Kashmir.

Introduction

Inguinal hernia is a protrusion of intra-abdominal contents through a patent processus vaginalis in the inguinal region. While it predominantly affects male children, female paediatric inguinal hernia, though less common, carries unique clinical significance because of the risk of ovarian involvement and potential for complications such as incarceration and strangulation.

The reported incidence of paediatric inguinal hernia ranges from 0.8% to 5%, with a male-to-female ratio of approximately 6:1. In females, the hernia sac often includes the ovary and fallopian tube, which increases the urgency for timely surgical intervention to prevent gonadal compromise. The right side is more frequently affected than the left, attributed to delayed descent and later closure of the processusvaginalis on the right side. Bilateral hernias, although less common, are more prevalent in infants and preterm girls, likely due to developmental immaturity. Early childhood, particularly the 3–5 year age group, sees the highest incidence. The gold standard for management is surgical repair as soon as the diagnosis is confirmed. Delayed intervention in female children poses a risk of incarceration, ovarian torsion, and loss of reproductive tissues.

The main complications following herniotomy include wound infection and hernia recurrence, with recurrence associated with both surgical technique and perioperative wound complications. Public health challenges such as late presentation, limited resources, and lack of awareness in peripheral settings in Jammu and Kashmir may further complicate timely diagnosis and optimal surgical care. Local data regarding female paediatric inguinal hernia are scarce due to low

prevalence and limited reporting, making such studies relevant for surgical and policy planning in the region.

Objectives

- To document age, laterality and complications of female paediatric inguinal hernia repair at a peripheral hospital in Jammu and Kashmir.
- To evaluate the incidence of complications such as recurrence and wound infection post-repair.
- To compare findings with regional and national epidemiological data.

Materials and Methods

A retrospective observational study was conducted in the department of surgery at Government District Hospital, Kishtwar in Jammu and Kashmir from January 2018 to October 2023. Records of all female paediatric patients (aged 3 years to 14 years) diagnosed with inguinal hernia and managed surgically during this period were reviewed. Data was collected from the hospital records and included:

- Age at presentation (grouped as 3–5 years, 6–10 years, 11–14 years)
- Laterality of hernia (right, left, bilateral)
- Complications (wound infection, recurrence)

Detailed demographic and clinical data were collected with a structured form. This included age, side, reducibility, content, and related issues. An ultrasound of the groin was done in all cases to confirm the diagnosis and assess hernial contents.

All patients had open herniotomy under general anaesthesia. A transverse skin crease incision was made in the inguinal area. The sac was located, dissected, and opened. The contents were examined, reduced, and high ligation of the sac was done. The wound was closed in layers. All patients received antibiotic prevention and were followed up for 2 years.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Female children aged between 3 years and 14 years.
- Clinically diagnosed with inguinal hernia.
- Managed surgically at the Government District Hospital, Kishtwar in Jammu and Kashmir during the study period.
- Patients who completed a minimum of 2 year postoperative follow-up.

Exclusion Criteria:

- Patients with abdominal wall hernias other than inguinal (e.g., umbilical or femoral hernias).
- Patients with hydroceles without an associated inguinal hernia.
- Patients with recurrent hernias previously operated in another center.
- Children who were lost to follow-up or observed for less than 2 years.
- Patients with additional conditions requiring simultaneous surgical intervention, or major congenital anomalies.
- Patients less than 3 years of age.

Results

Out of 22 female paediatric patients who underwent surgical repair for inguinal hernia at the peripheral hospital, the largest age group affected was 3–5 years, making up 63.63% of the cases (14 out of 22)while 27.27% (6 patients) fell in the 6–10 years age group, and the remaining 9.0% (2 patients) were aged 11–14 years. Regarding laterality, 68.2% of hernias (15 patients) were right-sided, 22.7% (5 patients) were left-sided, and 9.1% (2 patients) were bilateral.

Complications following herniotomy were uncommon: wound infection occurred in 9.1% (2 patients) while recurrence was observed in 4.5% (1 patient). No cases of testicular or ovarian compromise, strangulation, or mortality were reported in the study population. All patients were followed for at least six months postoperatively and responded well to conservative management where minor wound infection occurred.

Table 1: Age distribution of Patients

Age Group	Number of Patients	Percentage (%)
3-5 years	14	63.63
6-10 years	6	27.27
11-14 years	2	9

Table 2: Laterality

Laterality	Number of Patient	Percentage (%)
Right sided	15	68.2
Left sided	5	22.7
Bilateral	2	9.1

Table 3: Complications

Complication	Number of Patients	Percentage (%)
Wound Infection	2	9.1
Recurrence	1	4.5

Figure 1: Identification of the Sac

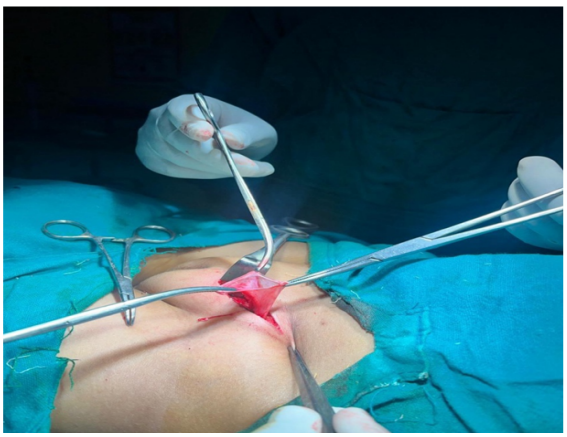

Figure 2: Reduction of contents after opening of sac.

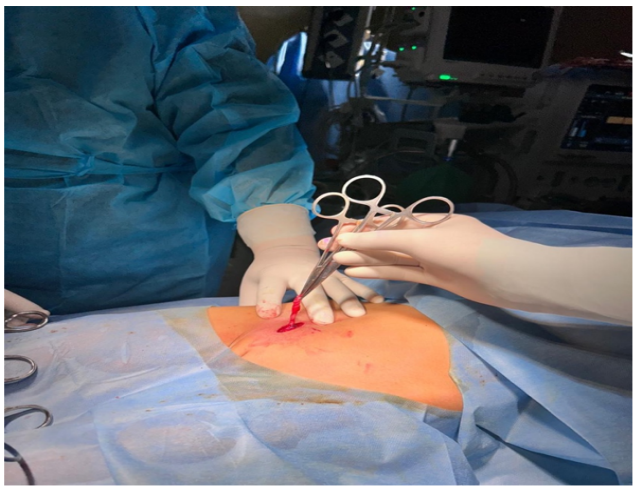

Figure 3: Transfixation of sac before dividing

Discussion

In this study, the majority (63.6%) of female paediatric inguinal hernia cases occurred in the 3–5 years age group, aligning with regional and national data. The right side predominated (68%), with left-sided (23%) and bilateral cases (9%), consistent with known anatomical and developmental factors. The observed complication rates—recurrence (4.5%), wound infection (9%)—were comparable to rates reported elsewhere, with wound infection serving as a key risk factor for recurrence due to potential for impaired wound healing.

Female paediatric hernias are clinically significant owing to higher risk of incarceration and gonadal involvement compared to males. Early surgical intervention remains critical. In peripheral healthcare settings, limited facilities for early diagnosis or pediatric surgery may lead to delayed presentations and higher complication rates, highlighting the need for training and public awareness campaigns.

Limitations include small sample size and retrospective design. Further multicenter and prospective studies would better delineate regional trends.

Conclusion

Female paediatric inguinal hernia, though less common than in males, poses unique risks of ovarian involvement and serious complications if not promptly managed. The study reaffirms the predominance of right-sided hernias and highest incidence in the first five years of life. Wound infection was the most frequent complication, with a small but significant risk of recurrence observed. Recommendations include early diagnosis, timely referral, and meticulous surgical technique—especially in peripheral medical settings—to minimize complications and ensure optimal outcomes.

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