CASE REPORT

Hernia uterus inguinale in a two months old female infant

Mahwish Noor-Ul-Haq[1], Muhammad Azam[2], Muhammad Sharif[3], Sadaf Zafarullah[4], Babar Shahzad[5], Muhammad Rehman Waheed[6]

Abstract

The most common age groups for indirect inguinal hernias are infants, with a low prevalence in girls. It is very uncommon for uterus, ovaries and fallopian tubes to be present in hernial sac altogether. Since strangulation and necrosis of these organs may result in serious illness and infertility, early detection and surgery are essential. The most useful technique for diagnosing and differentiating infant inguinal hernias is ultrasound. We sought to illustrate surgical features of a two months old female infant, delivered by caesarean section, presented to the Paediatric Surgery Emergency Department at Mayo Hospital Lahore on 8th March 2024 with irreducible mass in left groin. The diagnosis was made via ultrasound, which revealed an indirect incarcerated inguinal hernia containing viable uterus, ovaries and fallopian tubes. Surgery was performed through an inguinal approach, where the uterus, fallopian tubes and ovaries were found within the hernial sac. High ligation and additional repair of internal inguinal ring were done after reducing the contents in the peritoneal cavity. The postoperative course was uneventful.

Keywords: Inguinal hernia, Uterus, Ovaries, Fallopian tubes, female infant.

DOI: https://doi.org/10.47391/JPMA.21264

Introduction

An abdominal wall defect that allows the protrusion of the small intestine, omentum or other organs through it is known as hernia. Indirect inguinal hernias are the most common hernias of groin in children.[1] In comparison to boys, inguinal hernias in girls are comparatively rare. The ratio of boys to girls is 6:1, and the incidence is approximately 1.9% in girls.[2] In terms of contents of hernial sac, ovary and fallopian tubes are present in 15 to 20 % of inguinal hernias of female infants, uterus within hernial sac along with ovaries and fallopian tubes is exceedingly uncommon.[3] Due to the limited number of such cases in the literature particularly involving uterine herniation, we report the case of a female infant with left inguinal hernia that contains uterus in addition to bilateral ovaries and fallopian tubes.

Case Report

A 2-month-old female infant presented to the Paediatric Surgery Emergency Department at Mayo Hospital Lahore on 8th March 2024 with a mass in the left groin. According to her parents, the mass had been present since birth which became prominent on crying and coughing. It had remained prominent and unreduced for the past 5 days. There was no history of vomiting or constipation. The patient became irritable during the examination of her groin. On physical examination, an irreducible soft mass was observed in the left inguinal region with erythema of overlying skin. The infant was delivered at a postconceptional age of 39 weeks by caesarean section, with a birth weight of 2500 g. Ultrasonography was performed due to the suspicion of incarcerated inguinal hernia, which showed hernia defect measuring 2.9 cm in the left inguinal region through which uterus and ovary were herniating. Surgery was performed through an inguinal approach. Uterus, bilateral fallopian tubes and ovaries were found in the hernia sac. (Figure) Due to strong adhesion between hernial contents and hernia sac, gentle and careful dissection was done. The perfusion of the contents appeared normal. It was a little challenging to

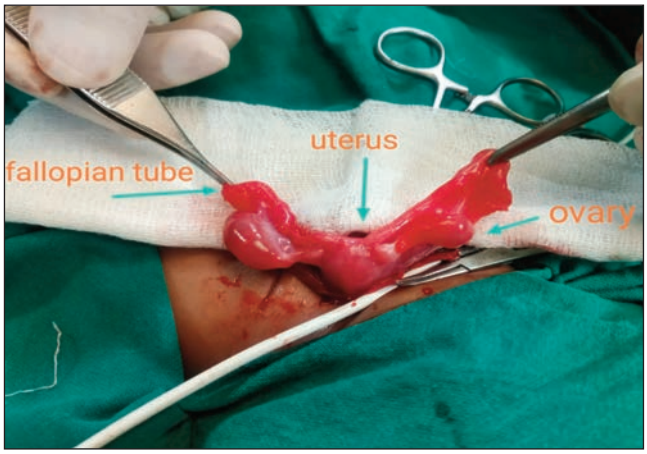

Figure: Contents of Hernial sac.

[1-3,5,6]Department of Paediatric Surgery, Mayo Hospital, Lahore, Pakistan; [4]Department of Thoracic Surgery, Mayo Hospital, Lahore, Pakistan.
Correspondence: Mahwish Noor-Ul-Haq. e-mail: mahwishnoor80@gmail.com
ORCID ID: 0009-0000-9362-9761

Submission completed: 25-06-2024 **1st Revision received:** 16-09-2024
Acceptance: 28-12-2024 **Last Revision received:** 27-12-2024

reduce the hernia's contents into the abdomen through the inguinal canal. To prevent the recurrence, a high ligation and an extra internal ring repair was carried out. After a routine overnight inpatient observation, the patient had an uneventful postoperative period and was discharged the next day.

Discussion

It is well known that compared to boys, inguinal hernias are less common in girls. The girls is 6:1.[2] In infant girls, the ovaries and fallopian tubes are present in 15 to 20% of inguinal hernias.[2,3] However, the presence of the uterus inside the hernial sac is incredibly uncommon in infants, only 73 cases have been documented in literature to date.[2,4]

The processus vaginalis emerges as an evagination of the parietal peritoneum during sixth month of foetal development.[5] Depending on the gender, it travels through the inguinal canal, the scrotum, or labium majus, while accompanied by testis or uterine inguinal ligament.[5] In female infants, the processus vaginalis is quite small and it typically disappears by the eight month of gestation. It is referred to as canal of Nuck, if patency persists.[5]

There may be some degree of ovarian and uterine ligament weakness, although the exact cause of inguinal hernia having uterus as a content is yet unknown.[6] According to Thompson, the ovary and uterus become more mobile when Mullerian ducts fail to fuse, leading to non-fusion of the uterine cornuae, which increases the risk of herniation of the ovary, fallopian tubes and uterus.[6] Elongated ovarian suspensory ligaments were thought to be either the main cause or a side effect of hernia, according to Fowler's theory.[7] Careful gynaecological follow-up is necessary until the reproductive age, as anatomical abnormalities may impact fertility.[5]

Different features of surgical treatment must be considered because these rare occurrences of indirect inguinal hernia containing uterus, fallopian tubes and ovaries are not common. Some authors recommend additional closure of internal ring as was done in our patient while others prefer a conventional herniotomy with a high ligation using an inguinal approach.[2,3] Since both the uterus and ovaries are closely attached to the hernial sac and are not easy to separate from its walls, the surgical approach for an inguinal hernia involving both organs differs from one involving only the ovary.

A thorough preoperative evaluation is required due to minimize the risk of injuring the herniated tissue during the surgery. When a female infant presents with an irreducible palpable inguinal mass, ultrasound should be done on regular basis.[8,9] Ultrasonography is a reliable and accessible option for diagnosis. With an efficacy of 100%, preoperative ultrasound with high frequency transducer is therefore very beneficial in making a diagnosis.[10] Early detection of an incarcerated inguinal hernia containing uterus, fallopian tubes and ovaries by paediatric surgeon or neonatologist, enables timely surgery and prevents damage to the herniated organs.

We advise high ligation and further internal inguinal ring repair after reducing these contents without harming the organs to prevent recurrence.

Conclusion

In conclusion, this case report documents a rare occurrence of hernia uteri inguinale in an infant. Prompt surgical intervention resulted in successful treatment and resolution of symptoms. This case highlights the importance of considering this diagnosis in infants presenting with inguinal masses. Early detection and treatment are crucial for optimal outcomes.

Consent to Publish: Written consent was provided by patient's parents.

Disclaimer: None.

Conflict of Interest: None.

Funding Sources: None.

References

1. Kara T, Seckin E, Durmaz MS, Kocaoglu C. Indirect inguinal hernia containing uterus, fallopian tube, and ovary in a term infant. Pediatr Urol Case Rep 2018;5:89-94.
2. Abdulhadi AB, Hadi AB, Amattalkhaleq MO, Bahakim K. Rare infantile inguinal hernia containing uterus, ovaries and fallopian tubes—a case report: presentation from Yemen. Surg Sci 2019;10:169.
3. Cascini V, Lisi G, Di Renzo D, Pappalepore N, Lelli Chiesa P. Irreducible indirect inguinal hernia containing uterus and bilateral adnexa in a premature female infant: report of an exceptional case and review of the literature. J Pediatr Surg 2013;48:e17-9. doi: 10.1016/j.jpedsurg.2012.09.065
4. Brooks G, Bisoffi S, Virgone C, Gamba P. Inguinal Hernia Containing the Uterus in the Pediatric Patient: A Systematic Review. J Pediatr Adolesc Gynecol 2022;35:182-7. doi: 10.1016/j.jpag.2021.11.007
5. Karadeniz Cerit K, Ergelen R, Colak E, Dagli TE. Inguinal Hernia Containing Uterus, Fallopian Tube, and Ovary in a Premature Newborn. Case Rep Pediatr 2015;2015:807309. doi: 10.1155/2015/807309
6. Taher H, Azzam A, Kamal A, Husseiny R, Farrag M, Nayef A, et al. Hernia uteri inguinale in an 18 months old female infant: A case report. Int J Surg Case Rep 2021;78:1-3. doi: 10.1016/j.ijscr.2020.11.125
7. Saini R, Bains L, Kaur T, Lal P, Pal V, Beg MY, et al. Ovarian inguinal hernia - a possibility in MURCS syndrome. J Ovarian Res 2021;14:114. doi: 10.1186/s13048-021-00869-y
8. Dai Y, Qin C, Zhu L, Luo G. Hernia uterine inguinale associated with Mayer-Rokitansky-Küster-Hauser syndrome: Three case reports and

literature review. Medicine (Baltimore) 2023;102:e32802. doi: 10.1097/MD.0000000000032802
9. Ming YC, Luo CC, Chao HC, Chu SM. Inguinal hernia containing uterus and uterine adnexa in female infants: report of two cases. Pediatr Neonatol 2011;52:103-5. doi: 10.1016/j.pedneo.2011.02.006
10. Muta Y, Odaka A, Inoue S, Takeuchi Y, Beck Y. Neonatal inguinal hernias containing the uterus: a case report on changes in uterine position. J Surg Case Rep 2023;2023:rjad503. doi: 10.1093/jscr/rjad503

Author Contribution:
MNUH: Writing, editing, literature review, gathered relevant information, coordinated the submission and revision.
MA: Writing and editing.
MS: Supervision and provided relevant guidance.
SZ: Writing, editing, concept and design.
BS & MRW: Data collection and interpretation.