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Hernia uteri inguinale in an 18 months old female infant: A case report

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ABSTRACT

INTRODUCTION: Inguinal hernia is the most frequent hernia of childhood. About 15–20% of females with inguinal hernias, the ovaries and/or the fallopian tubes may be contents of the herniation sac. Meanwhile uterus is very rare to be encountered.

Our aim is to alert Pediatric surgeons to such condition and remind them of the important technical steps to treat and manage this condition.

CASE REPORT: Elective surgery on an 18 months old female child with right inguinal hernia was performed electively through an open inguinal approach; the uterus, fallopian tubes and ovary were found in the hernia sac.

DISCUSSION: The etiology of the hernia uterine inguinale in general is controversial, however there may be some degree of weakness of the uterine and ovarian suspensory ligament. Thompson noted that if there is failure of fusion of the Mullerian ducts, it leads to increase in the mobility of ovary and uterus, increasing the possibility of herniation of ovary, tubes and uterus. It was reported to be associated with disorders of sexual development.

Surgical procedure for inguinal hernias containing uterus is often different from the ones containing only the ovary, as these organs are strongly attached to the hernia sac and it has to be freed from the wall of the hernia sac.

CONCLUSION: We want to stress that in hernia uterii ovarii, dissection of the sac is essential for successful hernia repair unlike routine hernioraphy and to consider associated disorder of sexual differentiation.

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1. Introduction

Inguinal hernia is the most frequent hernia of childhood. Inguinal hernias of the newborn has a frequency of 1–2% with a ratio of female to male between 1/4 and 1/10 respectively [1]. About 15–20% of females with inguinal hernias, the ovaries and/or the fallopian tubes may be contents of the herniation sac [2]. Meanwhile uterus is very rare to be encountered. Usually spontaneous regression takes place in some cases, yet if ovaries and/or intestinal structures are contents of the sac, this decreases the possibility of regression and increases the possibility of incarceration [3] and ovarian ischemia if the pedicel of the herniated ovary rotates around itself, an urgent operation comprise reduction of hernial sac content and closure of the hernial defect but if the sac is adherent to the Fallopian tube care is taken not to dissect the sac off these structures and to ligate the sac distal to the Fallopian tube

and division; the proximal sac is then invaginated into the peritoneal cavity through the internal ring with a purse string suture closure [1], followed by closure of the defect to avoid inadvertent injury of such delicate structures. In hernia uteri inguinale in which all of ovary, fallopian tubes and uterus are found in the hernia sac the sac should be dissected off the uterus before reduction into the abdominal cavity [4,5] and care to look for signs of disorder of sexual differentiation in those patients [6,7].

Our aim is to alert Pediatric surgeons to such condition and remind them of the important technical steps to treat and manage this condition.

This work has been reported in accordance with the SCARE criteria [8].

2. Presentation of the case

A female child weighing 9 kgs was delivered at 34th week of gestation by normal vaginal delivery and has history of NICU admission for prematurity, mother was primigravida. Her medical history is notable for galatosaemia, she is not on any medications except for dietary control of her condition and vitamin and mineral

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Fig. 1. Right sided indirect inguinal hernia containing uterus, both fallopian tubes and ovaries.

supplementation, there was no family history of genetic disorder. She presented at the outpatient clinic with a swelling in the right inguinal region at 18 month of age. Elective Surgery was performed through an inguinal approach; the uterus, fallopian tubes and ovary were found in the hernia sac (Fig. 1). Dissection of the uterus off the wall of the sac, since it was very adherent to it, followed by reduction in the pelvic cavity, ligation of the sac and performing an additional repair of the internal ring. No preoperative radiological investigations were carried out.

The operator was the surgical resident with 3 years of specialised surgical training. Post operative period was uneventful and patient was discharged home following day after routine inpatient overnight observation.

3. Discussion

At around the sixth month of fetal growth, Processus vaginalis develops as an evagination of parietal peritoneum. Depending on gender, it is accompanied by the testis or round ligament of the uterus and passes through the inguinal canal up to the scrotum or labium major. Processus vaginalis is relatively small in female infants and obliterates around eight months of gestation. It is termed the canal of Nuck If patency persists [4,6]. The hernia sac in female infant commonly contains ovary hence the name ovarian hernia, differential diagnosis includes hydrocele of canal of Nuck [1]. In forty reports of >7140 inguinal herniotomies and/or imaging studies in females, the hernia contains an ovary in 15–20%, often with the ipsilateral fallopian tube [9]. However, an inguinal hernia containing the uterus is extremely rare which is known as Hernia uteri inguinale. Few cases were reported in literature [6]. The etiology of the hernia is controversial, however there may be some degree of weakness of the uterine and ovarian suspensory ligament. Thompson noted that if there is failure of fusion of the Mullerian ducts, it leads to increase in the mobility of ovary and uterus, increasing the possibility of herniation of ovary, tubes and uterus [7]. While Fowler noted that elongated ovarian suspensory ligaments is the first cause of this hernia [10].

Despite normal karyotype there is an association with several disorders of sex development. In fact, the defect is considered a result of a müllerian abnormality, which comprises fusion defects of müllerian ducts up to müllerian aplasia and Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome. The herniation of the uterus and adnexa is owing to an excessive length and mobility of suspensory ligaments caused by the lack of fusion of the müllerian ducts during the second month of fetal development. This condition explains the other commonly associated defects, such as uterine anomalies (septate, rudimentary, unicornuate, bicornuate, didelphic, hypoplastic uterus), vaginal agenesis and renal agenesis several authors suggest a careful gynecologic follow-up until the childbearing period [6,7].

Ultrasonography should be routinely performed to diagnose the contents of the hernia as physical examination can give few insufficient data concerning the contents [4]. In our case, an ultrasonography was not available.

During our literature search we found no mention of laparoscopic experience in treatment of such condition, but we presume that it would be a superior approach as it would allow assessment of female internal productive organs and evidence of disorders of sexual development if present.

Surgical procedure for inguinal hernias containing uterus is often different from the ones containing only the ovary, as the uterus is strongly attached to the hernia sac and it is difficult to free it from the wall of the hernia sac [4,5]. In our case, Dissection of the uterus which was adherent to the wall of the sac, reduced in the pelvic cavity, ligation of the sac and an additional repair of the internal ring were performed. It is advisable to follow up these patients for fear of recurrence. In our case, after one year of follow-up, there has been no signs of recurrence.

4. Conclusion

We want to stress that in hernia uterii ovarii, dissection of the sac is essential for successful hernia repair unlike routine herniorraphy and to consider associated disorder of sexual differentiation.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

No need for ethical approval, This work is exempt.

Consent

Written informed consent was obtained from the patient's parents for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Ahmed Azzam primary operator.
 Heba Taher drafting manuscript, supervisor and corresponding author.
 Ahmed Kamal drafting manuscript.
 Reem Hussein drafting following up patient.
 Mohamed Farrag collecting stag and drafting the manuscript.

Amgad Naif following up the patient and drafting and post operative care.

Rana Zaki researching data and discussion.

Oliver Muensterer revision and critic.

Registration of research studies

Not applicable.

Guarantor

Heba Taher.

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