



## Sliding ovary inside a hernia sac; a true emergency<sup>☆</sup>

Amin El Gohary\*

Pediatric Surgery, Burjeel Hospital, Abu Dhabi, United Arab Emirates



### ARTICLE INFO

#### Article history:

Received 16 September 2014

Received in revised form

1 October 2014

Accepted 1 October 2014

#### Key words:

Inguinal hernia

Sliding ovary

Incarceration

### ABSTRACT

We report two cases of female infants aged 5 and 6 months with strangulated twisted infracted ovaries inside hernial sacs requiring oophorectomy. Both presented with tender left sided groin swelling with skin erythema. One of presented a day prior to her scheduled admission and the other had her acute symptoms as her first presentation. This risk warrants treating the asymptomatic irreducible ovary as a true emergency.

© 2014 The Authors. Published by Elsevier Inc. All rights reserved.

Inguinal hernia is one of the commonest pathology seen in the pediatric surgery. The contents can be bowel loops, ovaries in female, undescended testis, sliding hernia with bladder or appendix lying in the sac. Whereas inguinal hernias in newborn babies are managed as soon as possible for fear of strangulation, no urgency was coined with reducible ovaries in female hernia in the majority pediatric surgical centers. The recent encounter of an infracted twisted ovary in 2 infants prompted review of the current consensus of the management of female hernias with sliding ovaries.

### 1. Case reports

#### 1.1. Case 1

A five months old baby was transferred from a peripheral hospital with history of left tender irreducible groin swelling with red edematous skin diagnosed as strangulated hernia inguinal hernia. The patient was scheduled to be admitted for an elective surgery on the following day of her urgent admission. Manual reduction under sedation was not successful. Urgent exploration of the hernial sac was done. The sac was filled with serosanguinous fluid and blackish ovary (Fig. 1). The twisted ovarian pedicle with three turns was

derotated and warmed, but no improvement in perfusion was noticed and oophorectomy was performed (Fig. 2). The hernial sac was ligated at the internal ring. The contralateral small hernia sac was ligated. Histopathology confirmed hemorrhagic necrosis of ovarian tissues.

#### 1.2. Case 2

A six months old female presented with a similar history of irreducible left groin swelling with red edematous skin diagnosed as strangulated inguinal hernia. On exploration the left ovary was gangrenous with 360° twist requiring oophorectomy. The contralateral side explored and small hernial sac ligated. Histopathology confirmed hemorrhagic necrosis of ovarian tissues.

### 2. Material and methods

Between 1999 and 2013 we operated on 1685 patients with inguinal hernias, 254 of whom were females (17%) and of those 18 had reducible sliding ovaries (7%). We had encountered 2 cases of twisted ovaries in hernia sac during the last 2 years; both ovaries twisted around the pedicle 360° and was frankly gangrenous at exploration. Both ovaries were excised and histopathology reported hemorrhagic necrosis in both cases.

### 3. Discussions

Inguinal hernias containing uterine adnexae are not uncommon in infancy. In one study 31% of inguinal hernias in girls less than 2

<sup>☆</sup> This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

\* Corresponding author. Tel.: +971 506225532.

E-mail address: [amingoh@gmail.com](mailto:amingoh@gmail.com).



Fig. 1. The initial appearance at exploration with bluish hernia sac.



Fig. 2. Twisted gangrenous ovary.

years contained fallopian tubes and/or ovaries [1]. The management of a child with an irreducible ovary remains inconsistent in pediatric surgical centers. The consensus of opinion that irreducible sliding ovary does not pose a real threat to the blood supply and clinic cases were scheduled according to the availability of space in the routine operating list. An informal survey of senior pediatric surgeons and an extensive review of the literature showed a prevailing view that the trapped ovary is not at significant risk of vascular compromise [2] but has been challenged by several reports of twisted ovaries in hernial sac with or without infarction [3–7]. The incidence of non-reducible ovary inside the hernial sac in these reports was between 4% and 11% of which 2–33% ovaries were twisted and infarcted.

Of 1685 cases of inguinal hernia operated upon in our institution between 1999 and 2013, 254 were females (17%). Of these 18 (7%) have had irreducible sliding ovaries only 2 case were found to be twisted and infarcted on exploration (0.04%). The mechanism of torsion is likely to be related to the fact that the ovarian vascular pedicle is narrow at the internal ring, and the size of the ovary is relatively greater than the pedicle. This arrangement allows the ovary and tube to twist. This arrangement is similar to the “bell-clapper” anatomical variant well-recognized in the event of spontaneous testicular torsion, where there is inadequate fixation of the testis [4]. The management of the remaining ovary and the role of oophoropexy is debated. Asynchronous torsion of the remaining ovary has been reported [8] in children who have lost a normal intrapelvic ovary due to torsion. It has been suggested that herniotomy decreases the risk of torsion to the remaining ovary by returning it to a normally-fixed intra-abdominal position. Bilateral herniotomy should be routine in all these cases.

Our experience with twisted gangrenous ovaries together with similar reports in the literature, prompts a need to change the prevailing attitude toward the management of babies with sliding varities to make it an urgent indication for surgical exploration and hernia ligation.

#### 4. Conclusion

The prevailing thought that a sliding ovary inside female hernia is not at great risk of compression of its blood supply, this report identifies a significant risk of torsion. This risk warrants treating the asymptomatic sliding ovary as a true emergency.

#### References

- [1] Wiley J, Chavez HA. Uterine adnexa in inguinal hernia in infant females: report of a case involving uterus, both uterine tubes and ovaries. *West J Surg Obstet Gynecol* 1957;65:283–5.
- [2] Ozbey H, Ratschek M, Schimpl G, Hollwarth ME. Ovary in hernial sac: prolapsed or a descended gonad? *J Pediatr Surg* 1999;34(6):977–80.
- [3] Boley SJ, Cahn D, Lauer T, Weinberg G, Klein Haus S. The irreducible ovary: a true emergency. *J Pediatr Surg* 1991;26(9):1035–8.
- [4] Marinkovic S, Kantardzic M, Bukarcia S, Grebeldinger S, Pajic M. When to operate nonreducible ovary? *Med Pregl* 1998;51(11–12):537–40.
- [5] Merriman TE, Auldlist AW. Ovarian torsion in inguinal hernias. *Pediatr Surg Int* 2000;16(5–6):383–5.
- [6] Koak Y, Chaloner EJ. Hernia ovary inguinale with ovulating luteal cyst: a case report. *Grand Rounds* 2002;2:32–4 [Speciality: General Surgery].
- [7] Bradshaw KD, Carr BR. Ovarian and tubal inguinal hernia. *Obstet Gynecol* 1986 Sep;68(3 Suppl.):50S–2S.
- [8] Beaunoyer M1, Chapdelaine J, Bouchard S, Ouimet A. Asynchronous bilateral ovarian torsion. *J Pediatr Surg* 2004 May;39(5):746–9.