Case report

Pantaloon hernia in a woman: a straddling rarity

ABSTRACT

Introduction: Inguinal hernias are the commonest hernias in males and females. However, direct hernias are rare in females. Pantaloon hernia (combined direct –indirect hernia) is even rarer and there has been a single study reporting incidence of pantaloon hernia to be 1.6%. Here, we report a 56-year-old female patient who was clinically diagnosed to have right sided uncomplicated, indirect inguinal hernia.
Case Presentation: Intra-operatively, she was found to have 2 hernial sacs on either side of the inferior epigastric artery. She underwent resection of the round ligament with invagination of direct sac by suturing of transversalis fascia and herniotomy of indirect sac. The posterior wall was reinforced with Lichtenstein polypropylene mesh repair.
Discussion: The rarity of direct and hence, pantaloon hernia in women can be explained by the anatomical differences in the inguinal canal and abdominal wall between males and females. If detected in early childhood, the condition may be associated with disorders of sexual differentiation.
Conclusion: Direct inguinal hernias do occur in women albeit very rarely while pantaloon hernias are extremely rare and when present, may be associated with the testicular feminization syndrome in young children. The present case is reported with the purpose of documenting the extreme rarity of pantaloon hernia in adult women in the existing scientific literature.

Keywords: Pantaloon hernia, inguinal hernia, complete androgen insensitivity syndrome

1. INTRODUCTION

Inguinal hernias are the most common type of primary hernia in both males and females. Even in women, the most common type of the hernias are either indirect inguinal or femoral. Whereas indirect hernias account for 70 – 80%, femoral hernias constitute about 20% of all hernias. Groin hernias are one of the common causes of chronic pelvic pain in women and can cause a significant disability[1] A lot of indirect hernias in females can be occult due to location in the canal of Nuck. Those that become symptomatic usually require prompt treatment [2,3].

About 8% of the total groin hernia surgeries are done in women. Direct hernias per se, are very rare in females due to anatomical differences as compared to males. Incidence of direct hernia in women has been reported to range from 3% to 14%[3,4]. Pantaloon hernia (combined direct-indirect hernia) is a very rare variety of inguinal hernia where both the direct and indirect hernias exist on either side of the inferior epigastric artery.

The most commonly used techniques are the Lichtenstein mesh repair and laparoscopic repair. Here we report a case of a Pantaloon hernia in a female that was managed with the Lichtenstein tension-free mesh hernioplasty. It is the first case report of its kind in English literature to the best of our knowledge.

2. CASE PRESENTATION

A 56-year-female, diabetic and hypertensive with chronic kidney disease, presented with a progressively increasing swelling in the right groin associated with dragging type of pain, and difficulty in initiating micturition for six months.

On examination, there was a 5 x 5 cm^2 swelling in the right inguinal region, located above and medial to the pubic tubercle with an expansile cough impulse with smooth surface and doughy consistency. The swelling was completely reducible and failed to appear with the deep inguinal ring occlusion test.

With the clinical impression of an incomplete, uncomplicated, completely reducible right indirect inguinal hernia, she was planned for mesh hernioplasty.

Intra-operative findings revealed the presence of both direct and indirect herniae as evidenced by two distinct peritoneal sacs on either side of the inferior epigastric artery (Fig 1, 2.) The posterior wall was defective along the entire length of the inguinal canal.

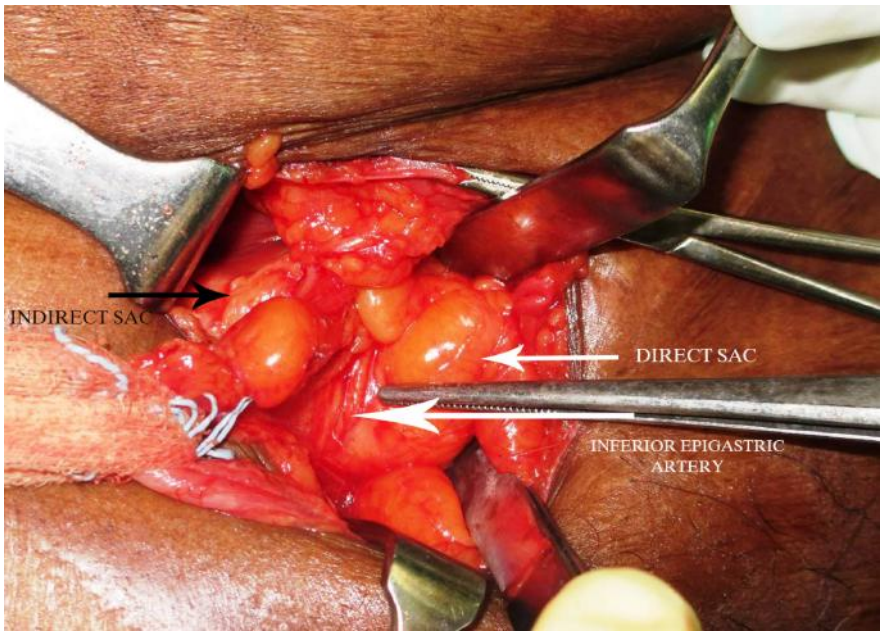

Fig. 1. Pantaloon hernia with 2 sacs on either side of inferior epigastric artery

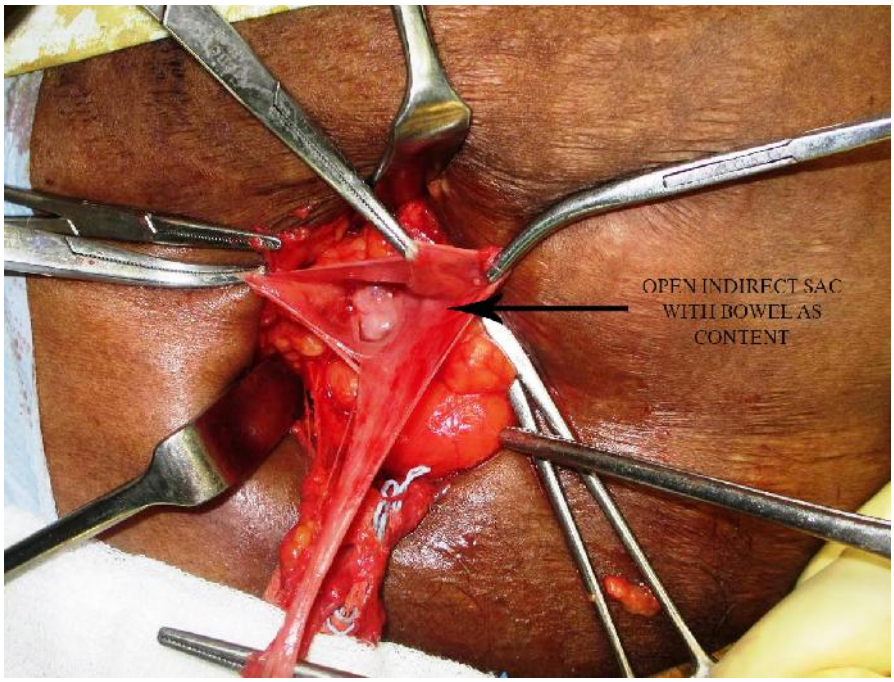

Fig. 2. Opened indirect sac with bowel as content

2.1 TREATMENT

The patient was planned for surgical treatment and underwent resection of the round ligament with invagination of the direct sac by suturing the transversalis fascia and herniotomy of the indirect sac. The posterior wall of the inguinal canal was then reinforced by placing a polypropylene mesh with Lichtenstein technique.

2.2 OUTCOME AND FOLLOW UP

The patient has done well postoperatively with no clinical evidence of recurrence at 6 months of follow up.

3. DISCUSSION

The inguinal canal, in males, is formed due to the descent of the testes from the abdomen into the scrotum by the gubernaculum which attaches the inferior pole of the testes to the scrotum. In females the gubernaculum attaches the ovaries to the labia majorum. However, due to attachment of the ovaries to the uterus by the ovarian ligament, they do not descend into the labia but remain in the pelvis. The gubernaculum, however, descends into the labia through the inguinal canal. The persistent canal in females is called the canal of Nuck. The gubernaculum later gives rise to the round ligament of the uterus which joins the uterus to the labia majorum through the inguinal canal[5].

Initially it was believed that direct hernias were an impossibility in women. However, it has been shown that though uncommon, they do occur in women. The incidence of direct and pantaloon hernia in women being 3.5% and 1.6% as compared to 21% and 5% in men[2]. This relative difference in the incidence is attributed to the anatomical differences in the abdominal wall and the canal between men and women. Due to the need to bear the stress of pregnancy and childbirth, the transverses abdominis muscle is relatively stronger in women leading to less chances of direct hernia[2]. Anatomical studies have shown that the posterior wall of the inguinal canal in females is stronger than males[6]. The distance between the pubic tubercle and the deep inguinal ring is larger and the rectus sheath is wider in females than the males. The rectus muscle is significantly wider and the internal ring itself is narrower in women due to the thinner and fewer contents - primarily the round ligament[7]. Also, the aponeurotic fibres of the transverse abdominis are deficient medially in men causing a defective shutter mechanism resulting in increased incidence of direct hernias[2]. The difference also has been attributed to a defective collagen synthesis due to exogenous causes(smoking and alcohol consumption) and endogenous causes like androgens[2].Thus, several factors have been suggested to cause the differences in the propensity of hernia formation between men and women[8].

In women, the most common content in the direct hernia is the ovary but may include the uterus and the urinary bladder. This has been attributed to the altered anatomy and localisation of the female gubernaculum due to androgen insensitivity. This theory has been supported by the fact that approximately 1.6% of the children presenting with inguinal hernia and having apparent female genitalia prove to be of male nuclear sex with intra-abdominal testes but female anatomy and endocrine function-complete androgen insensitivity syndrome previously called the testicular feminization syndrome[8].

Pantaloon hernias are very rare in women. Only a single study has reported the incidence of pantaloon hernia to be 1.8% in females and 5.6% in males from a single centre[4]. Review of surgical literature showed no other cases or incidences reported. It is believed that a large indirect hernia may cause dilatation of the deep ring leading to weakening of the posterior wall which may cause bulging of the hernial sac on both sides of the inferior epigastric vessels leading to formation of pantaloon hernia[9].

Although there are several hernia classification systems, perhaps, the Nyhus classification and Gilbert classification are the only ones (including the more recent European Hernia System) that may be assumed to consider pantaloon hernia as one of the subtypes, viz. Type 3b and Type 6 respectively, once again underscoring the rarity of the condition in both genders.

4. CONCLUSION

In conclusion, direct inguinal hernias do occur in women albeit very rarely while pantaloon hernias are extremely rare and when present, may be associated with the testicular feminization syndrome in young children. When present, pantaloon hernia in women should be treated with ligation and division of the round ligament of the uterus, obliteration of the canal of Nuck and mesh hernioplasty. The present case is reported with the purpose of documenting the extreme rarity of pantaloon hernia in adult women in the existing scientific literature.

CONSENT

All authors declare that 'written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal.

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