



ORIGINAL RESEARCH PAPER

General Surgery

TWO INDIRECT SACS IN A UNILATERAL INGUINAL HERNIA, AN UNUSUAL OCCURANCE-CASE REPORT.

KEY WORDS: Hernia, Inguinal, Indirect, Direct, Inferior epigastric.

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ABSTRACT

The exact type of inguinal hernia is usually made during its repair. Multiple direct or multiple indirect sacs in a unilateral inguinal hernia is extremely rare. A 30-year-old male presented with right groin swelling for six months. He was diagnosed to have right indirect inguinal hernia on clinical examination. On exploring the inguinal canal during hernial repair, two indirect sacs were found adjacent to each other, lying antero-lateral to the cord structures. Inferior epigastric artery was identified and no other direct component was found in the patient. Individual ligation of the indirect sacs was done, followed by Lichtenstein repair. This is a very rare entity, one of its kind, with only one other such case reported in India- the famous 'Jammu Kashmir and Ladakh hernia', a double direct, triple indirect sac in a unilateral inguinal hernia. Double indirect sac in a unilateral hernia is unique. Presence of multiple hernial sacs in inguinal hernia is a risk for recurrence, if not identified. Proper identification of inferior epigastric artery course is always essential in inguinal hernia repair.

INTRODUCTION:

The anatomical type of an inguinal hernia is accurately discovered only at the time of its repair. So, at the time of repair, careful exploration of the groin is essential for identifying multiple hernial sacs. Knowing the anatomical type of hernia reduces the rate of recurrence after repair and also prevents injury to the inferior epigastric artery. Indirect hernia is of congenital origin. It occurs through the deep inguinal ring, along with the spermatic cord structures, lying antero-lateral to it. It lies deep to the internal spermatic fascia, lateral to the inferior epigastric artery pulsations. Direct inguinal hernia is acquired and the sac protrudes through a weakness in the posterior wall of inguinal canal. The sac with its content lies postero-medial to the cord structures and medial to the inferior epigastric artery. A third type of inguinal hernia is the pantaloon or the saddlebag hernia which has both the direct and indirect component on the same side. Inferior epigastric artery along with vein follows usual course in sub-peritoneal tissue, and an aberrant course lying outside peritoneum with deviation from normal path traversed, is rare.

The work has been reported in line with the SCARE 2018 Criteria.⁴

CASE PRESENTATION:

A 30-year-old male, daily waged worker by occupation, native of southern India, presented with a single right groin swelling for 6 months. The swelling was initially small and gradually increasing in size. Patient did not have any chronic cough or LUTS. Cough impulse was present and the swelling was spontaneously reducible on lying down. He was clinically diagnosed to have right indirect inguinal hernia. Ultrasonogram of abdomen and groin confirmed the diagnosis of right inguinal hernia. Other laboratory parameters were normal. Patient was planned for elective right open hernioplasty.

On exploring the inguinal canal during hernia repair, there were two indirect sacs that were found to be adjacent to each other (figure 1).

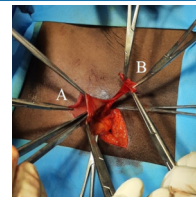


Figure 1: Intra-operative image right hernioplasty- showing double indirect sac with probe pointed into Sac A.

Both the sacs were lying antero-lateral to the cord structures, within the internal spermatic fascia. The inferior epigastric artery pulsation was medial to the sacs. Indirect sac A was bigger than indirect sac B (Figure 2).

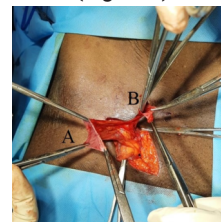


Figure 2: Intra-operative image right hernioplasty- showing double indirect sac with probe pointing into Sac B.

On opening the sacs, both did not have any content. Both were of bubonocoele type and both opened separately into the peritoneal cavity. Several attempts were made to look for any adhesions in between the two sacs, but none were identified even after thorough dissection and probing of sacs. No other direct component was identified in the patient. Each sac was transfixed separately and released into the peritoneal cavity. Lichtenstein's tension free mesh repair was done. Post-operative period was uneventful and the patient was followed up for a year after the surgery. There was no recurrence noted in the follow up period (figure 3).



Figure3: 12 months Post-operative image of right inguinal hernia/ Status post right hernioplasty showing healthy scar, without local recurrence.

DISCUSSION:

The inguinal canal, which runs from the deep inguinal ring to the superficial inguinal ring and contains the spermatic cord in males and the round ligament in women. The inguinal canal's direction, the transversalis fascia's role as a sphincter, and the deep ring's sphincter-like function all contribute to the abdominal wall's integrity in preventing the occurrence of hernia. The risk factors for developing inguinal hernia are male gender, old age, patent processus vaginalis, systemic connective tissue disorder, constipation, prostatic hypertrophy, which causes increase in intra-abdominal pressure.⁵

Indirect inguinal hernia is of congenital origin. The risk factors for indirect hernia is a patent processus vaginalis and cumulative mechanical exposure⁵. Direct hernia is acquired, and it occurs due to old age and connective tissue alterations. A faulty regulation mechanism of hormones, peptides from the genitofemoral nerve, and insufficient release of calcitonin gene-related peptide that affect testicular descent have been hypothesized as causes of aberrant hernia.

Inferior epigastric artery is the demarcation point for identifying indirect and direct hernia. The artery arises from the external iliac artery immediately superior to the inguinal ligament. It ascends medially to the deep inguinal ring towards the midline, lying sub-peritoneally. Below the arcuate line, the **inferior epigastric vessels** pierce the transversalis fascia on each side of the rectus sheath and enters the rectus abdominis muscle. Any sac lying medial to the artery in the inguinal region is of direct type and sac arising lateral to it is of indirect type.

In our case, we identified two sacs arising lateral to the inferior epigastric artery pulsations. Both sacs separately opened into the peritoneal cavity. This is a rare occurrence as only a single sac will be encountered in most patients.

Wani et al. from India reported a case with double direct, triple indirect sac in a unilateral inguinal hernia with anomalous course of inferior epigastric artery. The inferior epigastric artery was lying superficially on the posterior wall of inguinal canal, at the mid inguinal point. Each indirect sac was transfixed separately and the inferior epigastric artery was buttressed in the posterior wall to prevent entrapment during mesh placement. In contrast to this, our case had a normal inferior epigastric artery, but double indirect sac was seen.⁶

Lloyd et al. reported two cases of a 'third type of hernia' with defect lying between the deep ring and inferior epigastric artery⁷. Their first case had two sacs and their second case had an additional direct component. These findings were demonstrated laparoscopically during TAPP approach, while our case findings were seen by open method and both the sacs were found to emerge from the deep inguinal ring.

Jones et al. reported a pediatric case with multiple indirect sacs in a unilateral inguinal hernia, all opening separately into the peritoneum, with different contents⁸. The probable cause could have been any anatomical variations or anomalies.

CONCLUSION:

Double indirect sac in a unilateral hernia is unique. Presence

of multiple hernial sacs in inguinal hernia is a risk for recurrence, if not identified. Proper identification of inferior epigastric artery course is always essential in inguinal hernia repair.

Conflict Of Interest:

None.

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None.

Consent:

Obtained.

Ethical Approval:

Not required.

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