An Acute Strangulated Inguinal Hernia in an Elderly Female: A Case Report

ABSTRACT

Acute strangulated inguinal hernia is uncommon in females. We report a case of an inguinal hernia with small bowel strangulation in a 76-year-old woman with a history of chronic constipation and abdominal straining. The forward stooping posture, a weak abdominal wall along with continuous abdominal straining resulted in a complicated acute inguinal hernia. Our case etiology could be multifactorial with findings similar to direct inguinal hernia, sportsman's hernia, acute hernia, and Para pubic hernia. Irrespective of its etiology, our case was an acute strangulated inguinal hernia superimposed over a weak posterior inguinal wall strangulated at the level of the superficial inguinal ring. An open hernia repair was done without bowel resection. Chronic abdominal straining is a risk factor for acute hernias in elderly females. Inguinal hernias in elderly women must be operated on as early as possible due to the risk of strangulation.

Keywords: Acute; hernia; inguinal; female; direct; sportsman's.

1. INTRODUCTION

An inguinal hernia is defined as an abnormal protrusion of abdominal contents into the inguinal canal. A direct hernia protrudes medially to the inferior epigastric vessels through Hesselbach's triangle whereas an indirect inguinal hernia protrudes laterally through the deep ring. Inguinal hernias are relatively uncommon in women. The lifetime risk of developing an inguinal hernia in women is 3–5.8 %, [1]. Similar to men, direct inguinal hernias are less common than indirect inguinal hernias in women, [2]. Femoral hernias are more frequently obstructed than inguinal hernias in females, [3]. Among inguinal hernias, direct inguinal hernias carry less risk of strangulation and incarceration than indirect inguinal hernias due to a wide neck, [4]. Hence a strangulated inguinal hernia in a female is quite uncommon.

We present a case of an acute strangulated inguinal hernia in an elderly female in our case report.

2. CASE PRESENTATION

A 76-year-old female patient with a history of chronic constipation presented to the emergency with complaints of sudden onset of a painful lump in the right groin for 6 hours. She noticed the swelling after her nature calls. She did not give a history of any noticeable lump before. She was an old lady who takes the help of a stick for walking, a known case of senile kyphoscoliosis, who underwent left hip replacement for a fractured neck of left femur 2 years back. There was no history of vomiting, fever, abdominal distention, and trauma at the time of presentation. On local examination there was an obliquely oval swelling of size 6 x 4cm in the right groin over the area of pubic tubercle just above the right labia above the groin crease with well-defined superolateral and inferomedial borders (Fig. 1), whose surface appeared smooth, skin over the swelling was normal without any discoloration, the swelling was irreducible, without cough impulse, there was tenderness without a local rise of temperature, the swelling was firm in consistency and was not moving in any direction. Her left groin was normal. Abdomen was slightly distended. A provisional diagnosis of an irreducible inguinal hernia was made. She was kept nil by mouth. Gradually patient developed vomiting and an increase in abdominal distention, the swelling increased in size, and tenderness increased, X-ray erect abdomen showed small intestine obstructive features (Fig. 2) with lumbar scoliosis and an X-ray pelvis showed left total hip replacement prosthesis (Fig. 3). She was immediately taken up for surgery.

Intraoperatively there was a hernia sac with excess preperitoneal fat which was just lateral to

the right pubic tubercle (Fig. 4) containing congested small bowel (Fig. 5) which was getting compressed between the pubic bone, conjoined tendon fibers, and the superficial inguinal ring. There was a disruption in the external oblique aponeurosis and multiple tears in the conjoint tendon fibers. The site of herniation was from the medial corner of Hesselbach's triangle (Fig. 6). 100% oxygen inhalation and warm mopping reversed the small bowel ischemic changes. A small serosal tear was sutured and the posterior wall of the inguinal canal was repaired. There was toxic fluid from the strangulated hernia sac contaminating the surgical field. Mesh repair was not done due to the risk of infection.

Post-operative period patient was stable and got discharged on 4th day.

3. DISCUSSION

Our case findings seem consistent with an acute hernia superimposed on a direct inguinal hernia defect with a weak posterior wall. The sudden increase in intra-abdominal pressure during straining at stools due to chronic constipation might have led to tears in the posterior wall and acute herniation of the direct hernia sac through the superficial ring leading to incarceration and strangulation of the small bowel.

Our case also shares a few anatomical features with sportsman's hernia/groin or Gilmore's groin which is often seen in sports persons playing football, rugby, and cricket where the proximal muscles of the femur and lower abdominal muscles are specifically or excessively used [5]. The term sportsman's hernia is a misnomer [6] as there is no classical herniation of soft tissue in the groin but the anatomical findings of a weak posterior wall along with disruption of the external oblique aponeurosis, dilation of the superficial ring, and conjoint tendon tears [5] were all seen in our patient. Though sportsman's hernia is commonly seen in men, women also develop sportsman's hernia. Kesek and Ekberg [7] have found the incidence of sportsman's hernia as high as 24% in asymptomatic women less than 40 years old in their study. It may seem partly inappropriate to compare an elderly woman's hernia findings to a sportsman's hernia findings which are most often seen in athletic males, the reason for our comparison was our patient's continuous forward stooped posture (Fig. 7a-d) due to her kyphoscoliotic spine along with her limb length discrepancy due to prior left hip replacement which resulted in maximum weight bearing on her right side of the body, creating continuous opposing strain between the right lower abdominal (rectus abdominis) and upper thigh muscles causing a disruption of the muscle/tendon at their insertion site on the pubis [5,8]. The above factors along with recurrent episodes of abdominal straining during her nature calls have led to the development of an acute hernia through these defects leading to incarceration and strangulation at the level of the superficial inguinal ring, the excess preperitoneal fat also contributing to the incarceration.

Generally, groin hernias are underreported in women [9]. There is no single case of an acute strangulated inguinal hernia in an elderly female either a direct hernia or a sportsman's hernia reported in the literature. But Kulakoglu et al, [10] reported 2 cases of incarcerated direct inguinal hernia in females both were above 60 years, in one female patient aged 74 years there was small bowel perforation in the strangulated hernia due to delayed presentation, but both the cases were not acute.

An acute incarcerated external abdominal hernia is another entity that is well recognized where during the event of a sudden increase in the intra-abdominal pressure like straining at stools, retching, or vomiting, the contents of the hernia are squeezed through a narrow hernia sac neck into the sac. The subsequent recoil of the sac neck entraps the hernial contents, preventing them from returning to the abdomen, and hence incarceration followed by strangulation occurs [11]. The same pathophysiology has occurred in our case too in addition the excess pre-peritoneal fat over the hernia sac has prevented the hernia sac from returning to the abdomen.

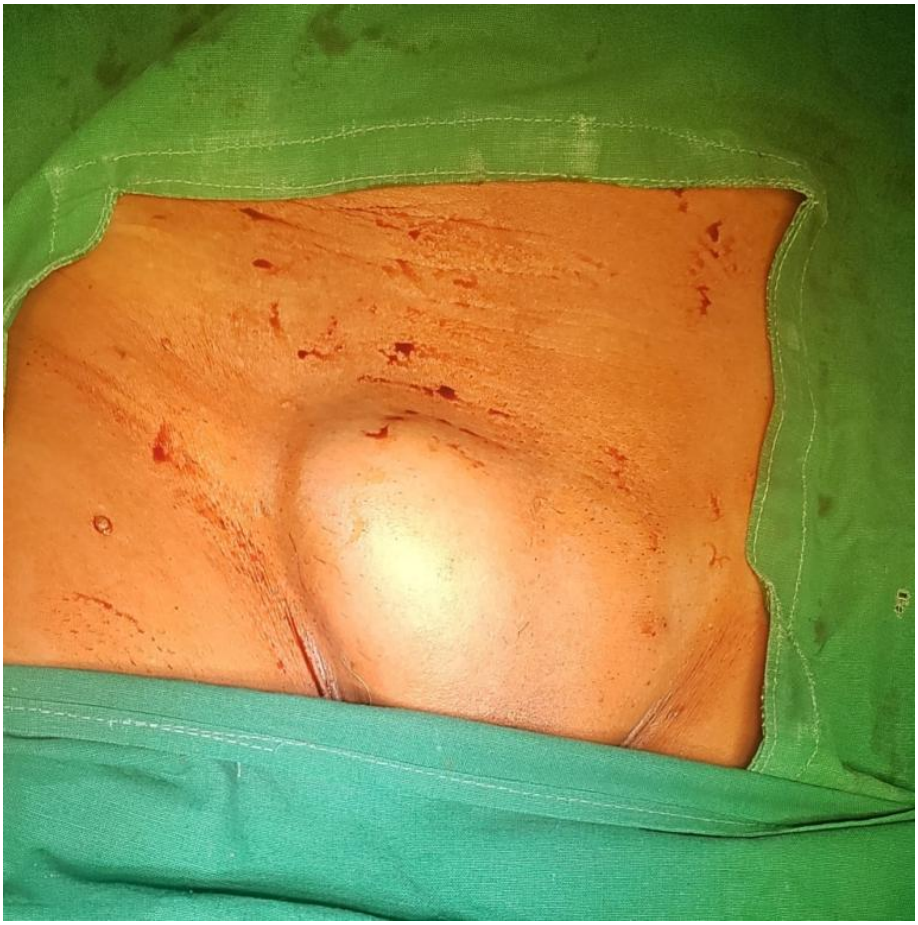

Fig. 1. Showing inguinal hernia with prominent borders. The hernia was above and medial to the right groin crease

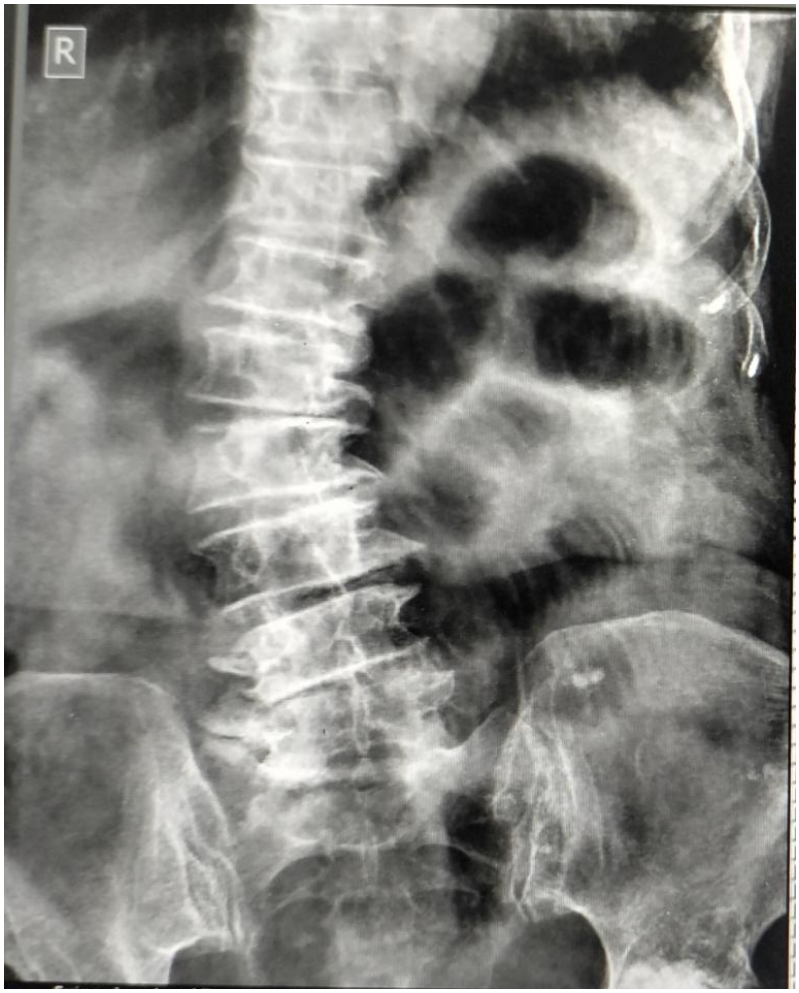

Fig. 2. X-ray-erect abdomen showing small intestine obstruction features with kyphoscoliosis of the lumbar spine

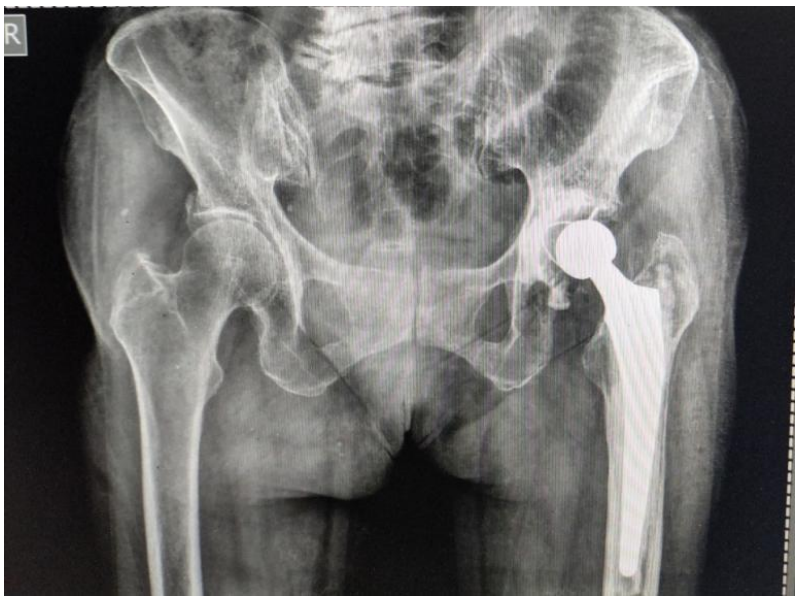

Fig. 3. X-ray of the pelvis showing left hip replacement prosthesis

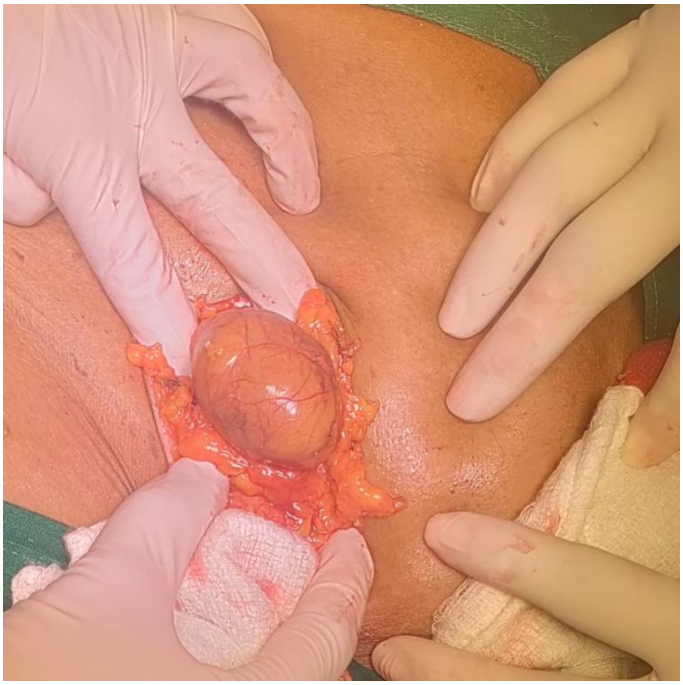

Fig. 4. Intraoperative picture of the hernia immediately after skin and subcutaneous fat incision

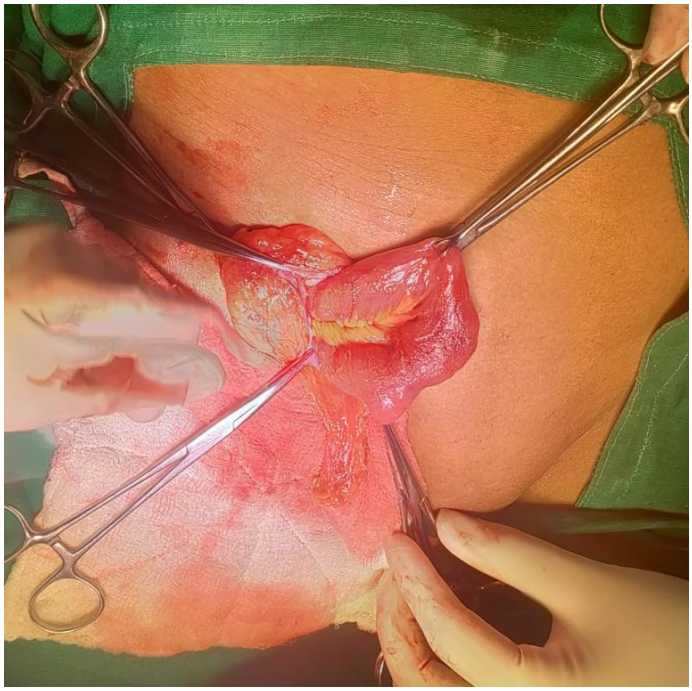

Fig. 5. Showing opened hernia sac with congested small bowel and excess preperitoneal fat

Parapubic hernias are another set of hernias that develop adjacent to the pubic bone either iatrogenic (post-surgery) or traumatic detachment of rectus abdominis muscles at the pubic bone [12]. Though our case hernia sac was adjacent to the pubic bone (para-pubic) it doesn't come under this category as there were no prior surgeries or trauma to the rectus abdominis muscle.

The pathophysiology in our case may be multifactorial. An elderly woman with a weak posterior inguinal wall (direct hernia, sportsman's hernia, old age), multiple tears in the lower

abdominal muscles near the pubic bone (sportsman's hernia, old age) due to her forward stooped posture, with a history of a recurrent sudden increase in the intra-abdominal pressure (acute hernia) due to chronic constipation developed a right acute incarcerated inguinal hernia which got strangulated at the level of superficial ring and pubic bone.

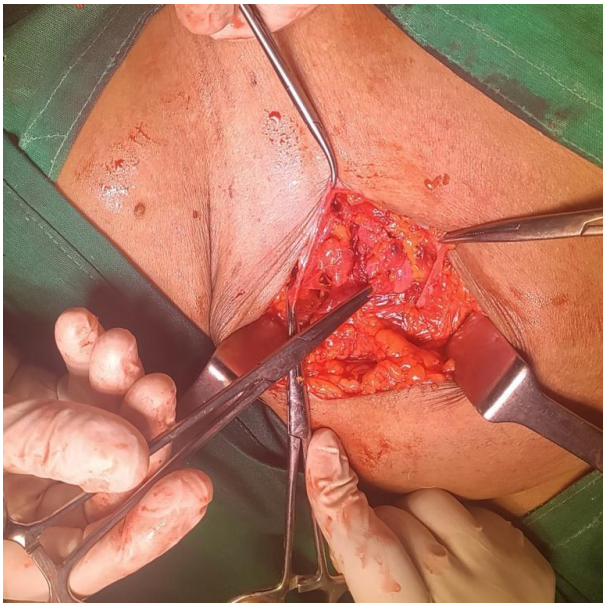

Fig. 6. showing multiple tears in the conjoint tendon, the straight artery forceps pointing out the hernia defect which was just lateral to the pubic tubercle

Fig. 7a-d. showing our patient's forward stooping posture due to kyphoscoliosis a- anterior, b- left lateral, c- right lateral, and d- posterior views

4. CONCLUSION

Acute strangulated inguinal hernia in an elderly female is an uncommon condition that requires emergency surgery. Elderly females should restrict any activities which increase their intra-abdominal pressure. Inguinal hernias in elderly women with a history of chronic constipation and abdominal straining should be operated on as soon as possible to prevent future complications. Any mechanism which causes strain on the lower abdominal and upper thigh muscles may lead to a sportsman's hernia or Gilmore's groin even in non-athletes. Though rare, direct inguinal hernias can also get incarcerated and become strangulated if diagnosed late, especially in elderly females.

CONSENT

As per international standard or university standard, patient (s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Köckerling F, Koch A, Lorenz R. Groin hernias in women-a review of the literature. Front Surg. 2019;6:4.
2. Zaki HA, Shaban EE, Zahran A, Bashir K, Elmoheen A. A rare presentation of small bowel obstruction due to obstructed indirect inguinal hernia. Cureus. 2021;13(12).
3. Dahlstrand U, Wollert S, Nordin P, Sandblom G, Gunnarsson U. Emergency femoral hernia repair: A study based on a national register. Ann Surg. 2009;249(4):672-676.
4. Kamat M, Singh N, Nattey K. A rare encounter of obstructed direct inguinal hernia of sliding variety. Int J Surg Case Rep. 2018;49:209-214.
5. Paksoy M, Sekmen Ü. Sportsman hernia; the review of current diagnosis and treatment modalities. Ulus Cerrahi Derg. 2015;32(2):122-129.
6. Brown A, Abrahams S, Remedios D, Chadwick SJ. Sports hernia: A clinical update. Br J Gen Pract. 2013;63(608):e235-7.
7. Kesek P, Ekberg O. Herniography in women under 40 years old with chronic groin pain. Eur J Surg. 1999;165(6):573-578.
8. Morales-Conde S, Socas M, Barranco A. Sportsmen hernia: What do we know? Hernia. 2010;14(1):5-15.
9. Ehlers AP. The female groin hernia: Isn't it time that we study this? Ann Surg. 2022;275(2):220-221.
10. Kulacoglu H, Kulah B, Hatipoglu S, Coskun F. Incarcerated direct inguinal hernias: A three-year series at a large volume teaching hospital. Hernia 2000;4(3):145–147.
11. Yang XF, Liu JL. Acute incarcerated external abdominal hernia. Ann Transl Med. 2014;2(11):110.
12. Losanoff JE, Richman BW, Jones JW. Parapubic hernia: A case report and review of the literature. Hernia. 2002;6(2):82-85.
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