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Research Paper

A case of strangulated femoral hernia containing a small intestine

[1.] Dr Satya Prakash Patra, [2.] Dr Saikh Md Sagir
[3.] Prof. Dr.Amit Ray

1&2 : , Post graduate Trainee, Department of General Surgery, Burdwan Medical College & Hospital, West Bengal, India
3: , Professor, Department of General Surgery, Burdwan Medical College & Hospital, West Bengal, India.

ABSTRACT
INTRODUCTION: *A femoral hernia is a protrusion of preperitoneal fat or viscus through the femoral canal.*
MATERIALS AND METHODS: *An 68-year-old woman presented to ER with the c/o acute abdominal pain and vomiting for the last 1 day, constipation and swelling in the right groin for the last 5 days. Straight x ray abdomen(erect posture) revealed multiple air fluid levels suggestive of small gut obstruction. Ultrasonography of the clinical groin swelling revealed hernia sac with internal contents showing no obvious demonstrable vascularity.*
RESULTS: *She was put up for emergency surgery. Internal contents showed incarcerated loop of small intestine, resection of unhealthy gut was done and both ends were brought out as double barrel ileostomy. The defect was repaired by 1-0 polypropylene suture . The patient recovered uneventfully and was safely discharged after 5 days and waitng for reversal after 3 months*
DISCUSSION: *Femoral hernias are relatively uncommon, accounting for ~ 2–4% of all hernias. Radiological imaging, including, can aid in establishing the diagnosis.*
CONCLUSION: *Prompt surgical intervention is crucial in managing a strangulated femoral hernia containing small intestine. Delayed diagnosis or treatment can lead to severe complications, including small intestinal perforation, peritonitis or even sepsis.*
Keywords: *Hernia, Femoral, Strangulated, Obstruction*

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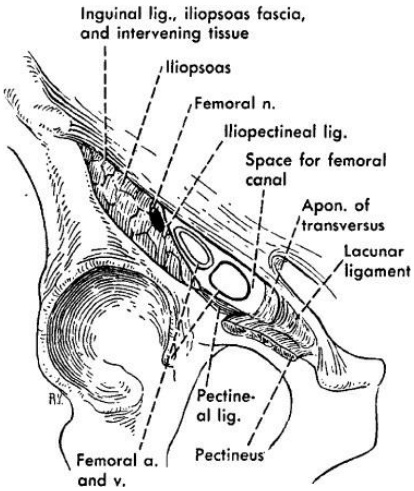
I. INTRODUCTION

A femoral hernia[1] is a protrusion of preperitoneal fat or viscus through the femoral canal. The sac has to pass through the femoral ring that normally exists and a new opening (orifice) at the lower end of the femoral canal. The femoral ring[2] is bounded medially by the lacunar ligament. Anteriorly the ring is bounded by the inguinal ligament and the iliopubic tract, posteriorly by the pectineal ligament (Cooper's) and laterally by connective tissue between it and the femoral (or iliac) vein. The femoral ring is prone to hernia because the "transversalis fascia" (in truth the membranous layer of the preperitoneal fascia) does not protect it, but passes downward to form the femoral sheath. After entering the femoral ring, the hernial sac enters the femoral canal.



Schema of the region of the femoral canal, seen from below. The inguinal ligament is pulled upward so that the lacunar ligament can be seen. (From Hollinshead WH. *Anatomy for Surgeons, vol. 2.* New York: Hoeber-Harper; 1956.)

We present a case report highlighting a rare occurrence of a strangulated femoral hernia containing the small intestine. Our aim is to emphasise the importance of early recognition, prompt surgical intervention and the potential difficulties encountered in diagnosing and managing this uncommon condition.

II. CASE REPORT

We report the case of a 68 year-old female who presented with a short history of sudden onset and worsening pain in the right groin with associated swelling(Figure 1-1) ; constipation and vomiting for 5 days. Symptoms suggestive of bowel obstruction were present. Previous history included tubectomy(30 years ago).

On examination, there was irreducible, firm ,tender and palpable mass in the right groin. Abdomen was distended, mildy tender. Per rectal examination revealed mild rectal ballooning and no stool. Nasogastric suction contents were dirty in appearance. She had no significant medical, surgical or drug history, lived with her grown up children.

Her initial observations were heart rate 75 bpm, blood pressure 110/70 mm Hg, respiratory rate 16, saturation 96% on 2 L via nasal cannulae and temperature 37.0°C. She was clinically dry and had mild abdominal tenderness Per rectal examination revealed mild rectal ballooning and no stool.. She was resuscitated with intravenous fluids, antibiotics.

Straight x ray abdomen(erect posture)[Figure 1-2] revealed multiple air fluid levels suggestive of small gut obstruction

Figure 1-1: Right inguinal swelling

Figure 1-2: Straight abdomen xray in erect posture showing multiplr air fluid levels

Ultrasonography of abdomen revealed distended gut loops with internal contents showing to and fro motion, with SAD 3 cm, s/o intestinal obstruction. Ultrasonography of the clinical groin swelling revealed 2.46 cm x 1.9 cm hernia sac with the wall of the sac thickened measuring 2. 5 mm and internal contents showing no obvious demonstrable vascularity. Valsalva was negative.

Fig 1-3: Strangulated femoral hernia with small intestine as content

She was put up for emergency surgery. Swelling was opened by incision below the inguinal crease(Lockwood approach)[7]. Hernial sac was dissected and the internal contents showed strangulated loop of small intestine(Fig 1-3) arising out of the right femoral canal. The abdomen was further opened by lower midline incision, the nonviable
small gut was resected (30 cm proximal to the Ileocaecal junction) and both ends were brought out as double barrel ileostomy on the left side in the ostomy triangle. Decision was taken to close the femoral defect with 1-0 polypropylene, due to the potential complication of mesh infection in the presence of a nonviable gut.

The patient recovered uneventfully and was safely discharged several days. She is being planned for ileostomy reversal after 3 months.

III. DISCUSSION

Femoral hernias account for approximately 4% of all groin hernias and may contain any intraabdominal structure that is relatively mobile. These hernias may contain different structures, including the small or large bowel[3], appendix[4] or a Meckel's Diverticulum. Very rarely, these hernias may contain both a De Garengeot's[4] and Richter's hernias. Timely diagnosis and treatment is a challenging clinical scenario.

Radiological imaging, including ultrasound and CT scans, can aid in establishing the diagnosis by revealing the presence of an small intestine within the femoral hernia sac. Prompt surgical intervention is crucial in managing a strangulated femoral hernia containing small intestine. Delayed diagnosis or treatment can lead to severe complications, including small intestinal perforation[5], peritonitis or even sepsis. Therefore, prompt surgical intervention is warranted.

Although preoperative CT scanning may be helpful in establishing the diagnosis, most cases are diagnosed intraoperatively. The established management of these hernias typically consists of emergency surgery with either an open or laparoscopic approach, influenced by the clinical picture. In situations where clinically there is suspicion of a femoral hernia[5] containing a perforated/ non viable gut, one may consider an open approach to reduce the risk of spillage into the peritoneal cavity. Similarly, a laparoscopic approach may be considered in femoral hernias depending on available expertise.

Interestingly, retrospective studies have revealed as many as 40% of acutely obstructed hernias are missed due to incomplete groin examination. CT imaging is helpful to identify the presence of an obstructed hernia, but may not identify the presence of the actual structure within the hernia sac. In the literature, only approximately 50% of these cases are diagnosed by CT imaging and therefore present a significant diagnostic challenge.

Surgical strategies[6] may vary depending on the surgeon's expertise and patient-specific factors.
The primary objective is to relieve the hernia's strangulation and remove the nonviable gut[7]. This typically involves performing an resection of nonviable gut and hernia repair concurrently.
We opted for open approach, performing an resction with double barrel ileostomy and femoral hernia repair for definitive treatment. A laparoscopic approach[8] in these cases may help to reduce postoperative complications such as paralytic ileus, overall length of hospital stay and overall financial burden. An open approach, however, may be required if emergency laparoscopy is not available, or if complications arise, such as bowel necrosis, gangrene or perforation

IV. CONCLUSION

Since femoral hernias are rare in occurrence(4% of all groin hernias) and may contain any intraabdominal structure, the diagnosis may often be missed pre operatively and hence the surgeon needs to be vigilant and wary of potential complications. The choice between open or laparoscopic[8] techniques depends on various factors, such as the surgeon's preference, patient's clinical condition and availability of resources. The varying surgical techniques reported demonstrate that there is no standard technique and management depends on the surgeon.

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Human Subject- Consent was obtained from patient and patient party.
Author Contribution- The author contributed to the study conception, design, material preparation, data collection, analysis, drafting and the final approval

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