

DE GARENGEOT HERNIA: AN ATYPICAL PRESENTATION IN AN ELDERLY MALE AND SURGICAL APPROACH

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Abstract: De Garengeot hernia is a rare condition where the appendix is located within a femoral hernia. Diagnosing it can be difficult, as it is often mistaken for an Amyand's hernia through visual examination and ultrasound, which can be inconclusive. Both types of hernias can cause inflammation, leading to elevated inflammatory markers. Therefore, maintaining a high level of suspicion in suspected cases is crucial to prevent postoperative complications. To ensure an accurate diagnosis, a CT scan of the abdomen and pelvis is recommended.

Keywords: De Garengeot Hernia, Femoral Hernia, Appendicitis, Amyand's Hernia, CT Scan, Inflammatory Markers, Postoperative Complications

Introduction

De Garengeot hernia, where the appendix gets trapped in a femoral hernia, is extremely rare (< 0.1%) (1). It's challenging to diagnose due to its unusual presentation, often mimicking other abdominal conditions (2). Clinicians may misidentify it as a typical inguinal hernia (3), necessitating a thorough diagnostic investigation (4). A de Garengeot hernia can usually be diagnosed during surgery because the surgeon can directly see and assess the hernia's contents.

Results

CASE PRESENTATION:

An 80-year-old man with no prior operative or chronic disease history, such as hypertension and diabetes, respectively, presented to the emergency department with a 1-month history of right lower quadrant abdominal pain. The pain was dull in the right groin and sometimes radiated to the lower right back. He denied any recent trauma, fever, chills, dysuria, or hematuria. On further inquiry, he reported having experienced nausea and vomiting about three days before admission. The vomitus was non-projectile, consisting mainly of clear fluid. He also had constipation for the last two days with no passage of stool. The vital signs of the patient were all within normal limits at the time of the first assessment; at 37.4°C, the body temperature was average, and the pulse rate was 80 bpm with 18 breaths per minute respiration, 125/80 mmHg blood pressure, and oxygen saturation at 98% at room air. On physical examination, a slightly distended abdomen was observed, showing a noticeable pain level in the lower right quadrant and no rebound tenderness or guarding. Another finding was a nonreducible, mildly painful lump, not attached to the pubic symphysis, in the right inguinal area. The bowel sounds decreased on auscultation. The laboratory findings were as follows:

Test	Normal Range	Units	Patient Result
WBC	4-11	x10 ³ /μL	10.4
HGB	11.5 - 17.5	g/dL	14.6
HCT	36 - 54	%	47.5
PLT	150 - 450	x10 ³ /μL	294.0
Sodium (Na)	135 - 150	mmol/L	137.0
Potassium (K)	3.5 - 5.1	mmol/L	4.04
Chloride (Cl)	96 - 112	mmol/L	106.0
Blood Urea	18 - 45	mg/dL	43.81
Creatinine	0.64 - 1.2	mg/dL	0.72



Figure 1: Xray erect abdomen of the patient showing dilated small gut loops

PREOPERATIVE DIAGNOSIS:

Based on the patient's symptoms, the primary diagnosis was an incarcerated inguinal hernia, which included pain in the lower right quadrant, nausea, vomiting, and constipation, as

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well as the presence of a painful, non-reducible mass in the right inguinal area.

OPERATIVE FINDINGS:

The patient received spinal anesthesia. Using the aseptic technique, a surgical incision is made in the right inguinal area. The incision starts above the inguinal ligament, about 1 cm above the pubic tubercle, and extends to the mid-inguinal point. The layers of muscle are then carefully dissected. Upon exploration, a femoral hernia containing a **sliding, acutely inflamed appendix** was identified within the hernia sac (figure 2). This confirmed the diagnosis of an incarcerated De Garengeot hernia. An **appendectomy** was performed, removing the inflamed appendix. The femoral hernia was then repaired **primarily** (without mesh) to address the underlying anatomical defect. Skin closed in interrupted fashion with non-absorbable suture.



Figure 2: intraoperative picture showing the inflamed appendix, hernial sac and inguinal ligament above that.

POSTOPERATIVE COURSE:

The patient tolerated a regular diet after starting with liquids and received intravenous antibiotics and pain medication for 24 hours. He was monitored for signs of infection and ileus, and his postoperative course was uneventful. The patient was discharged on postoperative day two with a clean wound site and clear instructions for wound care and follow-up. A follow-up appointment was scheduled for two weeks postoperatively to evaluate wound healing. Wound edges were approximated with a healed scar.

Discussion

Garengeot hernias are distinct protrusions found in the femoral region that contain the appendix. Anatomical anomalies and aberrant rotation of the colon during embryonic development may play a role, although the precise etiology of this condition remains uncertain (2). The symptoms of this condition can exhibit a wide range, including non-specific manifestations such as abdominal pain, nausea, vomiting, fever, and exhaustion, as well as the more particular indication of an irreducible mass in the femoral area (2).

De Garengeot's hernias are often present as obstructed femoral hernia which shows sign of irreducibility and if delayed then skin changes might be visible on inspection of the hernial swelling located below and lateral to the pubic tubercle. The initial presentation rarely identifies septic

signs or symptoms (5). With challenges in accurately diagnosing the condition due to its rare nature, diagnosis is therefore made during surgery. Thus, attempts to precisely diagnose content should not delay early emergency surgery. The traditional open right inguinal incision, from the pubic tubercle laterally to the mid-inguinal point which we did in our case, gives poor exposure to the site of De Garengeot's hernias compared to the McEvedy incision. Whereas timely surgery with a single McEvedy incision allows appendicitis (appendectomy) and the abdominal wall defect (hernia repair) to be tackled as a single procedure (6). However, in cases with high index of suspicion a diagnostic laparoscopy should be performed which can be both therapeutic and diagnostic and performed in early period when skin changes are minimal and least chances of perforation are there to avoid the possible risk of peritonitis. A patient who has an irreducible femoral hernia and shows biochemical markers indicating an acute inflammatory process should raise a strong clinical suspicion of De Garengeot's hernia and should be followed with a CT scan of abdomen so that a clear diagnosis is made timely and thus can avoid intraoperative complications. Perforation of the appendix may be hidden may lead to local sepsis, due to anatomical encasement in the hernia sac. These changes were not seen in our case since all baselines presented with no signs or symptoms of shock.

Conclusion

In conclusion, de Garengeot hernia represents a rare and complex clinical entity that poses significant diagnostic challenges. While imaging techniques can be helpful, definitive diagnosis often occurs intraoperatively. Awareness and consideration of this condition are crucial for timely and effective surgical intervention. This case underscores the importance of a high index of suspicion and thorough diagnostic evaluation in patients presenting with atypical femoral hernia symptoms.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned.

Consent for publication

Approved

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Conflict of interest

The authors declared absence of conflict of interest.

Author Contribution

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