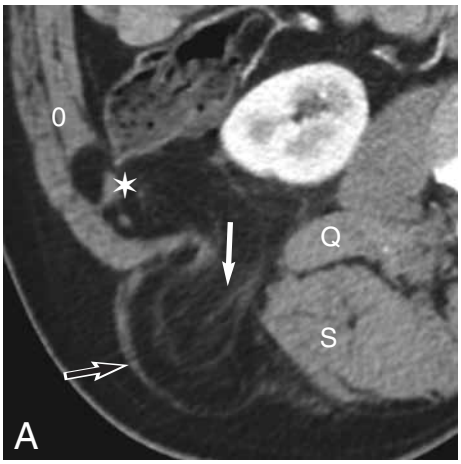
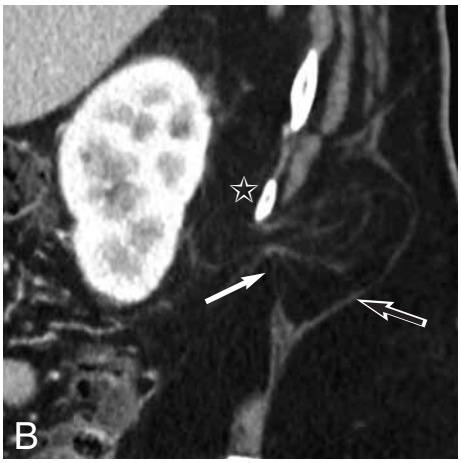
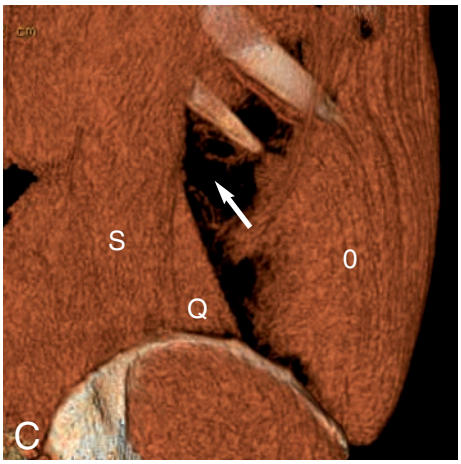
JBR–BTR, 2011, 94: 99.

IMAGES IN CLINICAL RADIOLOGY







Grynfelt hernia

B. Coulier[1]

A 74-year- old patient was addressed to the department of gastro-enterology with complaints of epigastric pain. Hepatic tests where moderately altered with signs of cholestasis. Contrast enhanced abdominal CT demonstrated carcinoma of the lower back of the gallbladder with numerous distant epigastric tumoral lymphadenopathies (not illustrated).

The abdominal CT fortuitously demonstrated two very rare types of hernia for which the patient presented no symptom: an Amyand hernia (indirect inguinal hernia containing the appendix) and a very rare lumbar hernia through the infracostal superior lumbar triangle of Grynfelt (Fig. A, B, C).

Extraperitoneal perirenal fat was protruding (white arrow) through the fascia transversalis and the aponeurosis of the transverse abdominis muscle through an orifice limited externally by the oblique muscles (O), internally by the erector spinae (S) and quadratrus lumborum (Q) and superiorly by the 12th rib (black star). Partially interstitial disruptions of transverse abdominis and internal oblique muscles are also visible more laterally (star). The protrusion is covered by the elongated latissimus dorsi muscle (black arrow).

Comment

Lumbar hernias are very rare representing no more than 2% of all abdominal hernias. They are classified on the basis of their anatomic position, such as superior (superior triangle or square of Grynfelt), inferior (inferior triangle of Petit) or diffuse and on the basis of their etiology (congenital, acquired or incisional). Congenital hernias (20% of lumbar hernias) perforate preferentially through the inferior lumbar triangle while acquired hernias (80% of lumbar hernias) are predominantly associated with the superior lumbar triangle. These acquired hernias are further subdivided into primary forms – 55% of lumbar hernias occurring non-traumatically – and secondary forms – accounting for approximately 25% of lumbar hernias –. Older patients with excessive weight loss, increased abdominal pressure or increased physical labor are predisposed to primary forms of acquired hernias – which affect the left side more often –. Secondary forms arise from surgical procedures – flank incisions, renal surgery or iliac bone graft harvesting – or non surgically causes – traffic accidents, falls, lumbar abscesses, penetrating wounds –.

The very narrow lumbar space is bordered by the 12th rib superiorly, the iliac crest inferiorly and the mass of the erector spinae muscles medially. Two orifices can be described: an inferior and superficial, triangle shaped – Petit's triangle – and a superior, deep, triangle or squared shaped – Grynfelt square –.

The superior lumbar hernia through the lumbar inverted triangle or square of Grynfelt is larger and deeper. This triangle or square is defined medially by the erector spinae muscle group, laterally by the internal oblique muscle and superiorly by the 12th rib. The fascia transversalis and the aponeurosis of the transverse abdominis muscle form the floor and the roof is formed by the latissimus dorsi muscle. This area can be naturally weakened by the exit of vessels or nerves.

Grynfelt hernia produces in 2/3 of cases in males with or without peritoneal sac. In the first case colon may protrude into a peritoneal sac and in the second posterior retroperitoneal fat or kidney may protrude.
CT and MRI are the best modalities to diagnose the abdominal defect. If indicated a surgical procedure is the best treatment performed by direct or laparoscopic approach, with or without a mesh according to the cause and size of the defect. Result are usually good with no pain or recurrence.

Reference

1. Cesar D., Valadao M., Murrahe R.J.: Grynfelt hernia: case report and literature review. *Hernia*, 2010, 5 (Epub ahead of print).

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