

Amyand hernia: considerations for operative approach and surgical repair

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CASE DESCRIPTION

The patient is presented to the emergency department following the acute onset of abdominal pain, nausea and a painful mass in the right groin. This was following several months of experiencing a painless bulge in the groin that appeared only with heavy lifting or straining. Physical exam revealed normal vital signs, a diffusely tender abdomen and an irreducible, exquisitely tender 5 cm firm mass in the right inguinal crease. The white cell count was $15.7 \times 10^9/L$ and CT abdomen and pelvis with intravenous contrast showed an indirect right inguinal hernia containing a dilated appendix measuring 11 mm with wall enhancement, a 5 mm appendicolith and surrounding fat stranding (figure 1). Based on the physician exam, clinical presentation and imaging, the patient was diagnosed with incarcerated right indirect hernia containing an acutely inflamed appendix without rupture. This was consistent with an amyand hernia.

WHAT WOULD YOU DO?

- Laparoscopic hernia reduction, appendectomy and mesh repair.
- Laparoscopic hernia reduction, appendectomy and primary tissue repair.
- Open hernia reduction, appendectomy and mesh repair.
- Open hernia reduction, appendectomy and primary tissue repair.

WHAT WE DID AND WHY

Open hernia reduction, appendectomy and primary tissue repair

Amyand hernia is a rare type of inguinal hernia in which the appendix is contained within the hernia sac. It accounts for approximately 1% of inguinal hernias and is complicated by acute appendicitis in 0.08%–0.13% of the time.

This patient's leukocytosis and CT abdomen/pelvis showing a dilated appendix with fat stranding was consistent with an amyand hernia complicated by acute appendicitis without rupture. We initially performed diagnostic laparoscopy and attempted reduction of the appendix into the abdominal cavity with a laparoscopic approach. Our plan was to perform a laparoscopic appendectomy followed by a tissue repair of the inguinal hernia. We attempted to reduce the hernia with gentle retraction from within the abdomen and with external compression without success.

We then converted to an open approach with a transverse incision between the pubic symphysis to the anterior iliac spine. The external inguinal ring



Figure 1 CT abdomen pelvis showing the appendix within an indirect right inguinal hernia. The appendix measures up to 11 mm with wall enhancement, and there is a 5 mm appendicolith. There is mild fat stranding and inflammatory change surrounding the appendix.

was exposed with an obvious hernia sac containing bowel. The hernia sac was dissected away from the cord structure, which on entry revealed an ischemic and inflamed appendix (figure 2). The incarcerated appendix and part of cecum was found to be viable without evidence of perforation. We pulled the cecum through the hernia and performed our open appendectomy through the inguinal incision (figure 3). The mucosal base of the appendix was cauterized, and we ensured the cecum was freed from surrounding attachments before placing the bowel back into the abdomen. Finally, we performed a primary tissue Bassini hernia repair. The patient was doing well with no hernia recurrence during a postoperative visit 3 weeks later.

Amyand hernia has a wide range of presentations, ranging from a normal appendix within an inguinal



Figure 2 Incarcerated and acutely inflamed appendix.

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Figure 3 Inflamed appendix mobilized from hernia sac prior to appendectomy.

hernia, to acute appendicitis in an inguinal hernia with peritoneal and/or abdominal wall sepsis. Losanoff and Bassof proposed a schema for surgical repair based on clinical and imaging findings. The surgical treatment depends on the presence or absence of appendicitis and the extent of inflammation/sepsis. In the cases of amyand hernia with a non-inflamed appendix, the recommended management is laparoscopic hernia reduction only with mesh repair. An amyand hernia with appendicitis,

but without peritoneal/abdominal wall sepsis, warrants laparoscopic appendectomy if technically feasible with primary tissue repair as the clean-contaminated surgery precludes mesh repair. Lastly, the preferred management of acute appendicitis within the inguinal hernia with incarceration or abdominal peritonitis is open appendectomy, primary tissue hernia repair and possible laparotomy if there is free perforation.

Our patient had acute appendicitis without peritonitis; thus, we initially attempted a laparoscopic reduction in accordance with the Losanoff and Bassof classification and management recommendations. This case is unique in that a safe intra-abdominal reduction was not possible given the severity of incarceration, so the decision was made to convert to an open appendectomy and hernia repair. This case highlights the heterogeneity of amyand hernia presentations and how the surgical management may differ from recognized guidelines in the setting of unexpected intraoperative findings.

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