Chirurgia (2012) 107: 521-523
No. 4, July - August

Perforated Appendix with Periappendicular Abscess in a Inguinal Hernia Sac - Amyand's Hernia

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Rezumat

Apendicită gangrenoasă perforată cu abces peri-apendicular în sac de hernie inghinală – hernie Amyand

Hernia Amyand este o formă rară de hernie inghinală ce conține apendicele în sacul herniar. Prezentăm cazul unui pacient în vârstă de 81 de ani care se prezintă în urgență pentru formațiune pseudo-tumorală inghinală dreaptă, însoțită de dureri locale marcate, grețuri, subfebrilități și tulburări ale tranzitului intestinal. Se indică intervenția chirurgicală de urgență cu suspiciunea de hernie inghinală încarcerată cu iminență de strangulare. Intraoperator se decelează prezența unui abces periapendicular post apendicită gangrenoasă, perforată în sac de hernie inghinală indirectă dreaptă. Se practică evacuarea abcesului, apendicectomie și cura operatorie a herniei inghinale – procedeu Bassini, drenaj Douglas și subcutan. Evoluția postoperatorie este favorabilă, pacientul fiind externat în ziua 5 postoperator. Controalele postoperatorii efectuate la 3 și 9 luni nu au decelat prezența recidivei herniare.

Cuvinte cheie: hernia Amyand, abces peri-apendicular, hernie inghinală, apendice perforat, apendicită acută

Abstract

Amyand's hernia is a rare form of inguinal hernia, where the appendix is included in the hernia sac. We present the emergency case of an 81-year-old patient with right inguinal pseudo-tumor, accompanied by marked local pain, nausea, low grade fever and bowel disorders. Emergency surgery is indicated due to a suspected incarcerated inguinal hernia with imminent strangulation. The intraoperatory findings reveal the presence of a periappendicular abscess as the cause of gangrenous appendicitis, perforated in the right indirect inguinal hernia sac. The practice includes the evacuation of the abscess, appendectomy and surgical cure of the inguinal hernia – Bassini's procedure, Douglas drainage and subcutaneous drainage. The postoperative outcome was favorable, the patient being discharged on the fifth postoperative day. Postoperative checks performed at 3 and 9 months have not revealed the presence of a hernia recurrence.

Key words: Amyand's hernia, periappendicular abscess, inguinal hernia, perforated appendix, appendicitis

Introduction

Amyand's hernia is defined as inguinal hernia containing the vermiform appendix (normal or inflamed) in the hernia sac. This disease was first described by Claudius Amyand in 1735 in a 11-year-old boy. According to literature data, Amyand's hernia is a rare disease having a 0.51% incidence of all inguinal hernia cases (1). The presence of acute appendicitis (or periappendicular abscess) in inguinal hernia sac arouses a special interest having an approximate 0.1% occurrence frequency of all cases of acute appendicitis (1, 2).

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Case report

The 81-year-old patient came to the clinic's emergency unit due to a pseudotumor mass in the right groin, accompanied by marked local pain, nausea, low grade fever and altered bowel disorders with an approximate 72 hours onset. The personal medical records of the patient showed that he was diagnosed with right inguinal hernia 10 years ago, which is known to grow in size over time. The patients also presented associated chronic ischemic heart disease and high blood pressure, obviously neglected.

At clinical examination we identified an approximate 10/5 cm pseudotumor mass in the right groin, having an erythematous aspect, increased consistency, irreducible, very sensitive to touch, without impulse to cough or effort. Laboratory analysis revealed the presence of leukocytosis (13.5 K/ul) with neutro-philia, with normal values for the rest of the biochemical tests.

The case was interpreted as incarcerated right inguinal hernia (with imminent strangulation), and no other para-clinical examination were further performed. After a quick pre-operative treatment (intravenous treatment with antibiotics: second generation cephalosporin and metronidazole) an emergency surgical intervention is being performed under general anesthesia with orotracheal intubation. An incision was made in the right groin skin parallel to the inguinal arch, 2 cm above it. The subcutaneous tissue with edematous aspect was dissected, and the right inguinal canal was opened and then the edges of the plague are being sealed. The exploration revealed a sac of external oblique inguinal (indirect) hernia containing a purulent collection (approx. 25-30 ml), necrotic tissue and a tubular structure that deeply passes through the inguinal orifice, ending in an edematous mass, congested in the cecum. After abscess aspiration and necrotic tissue debridement, the tubular structure was identified as gangrenous appendix, perforated at the top, (Fig. 1) The hernial sac was dissected and resected preserving the spermatic cord. (Fig. 2) Further, a clasic appendectomy was performed. (Fig. 3) A drain tube was installed in the pouch of Douglas. This was followed by the surgical treatment of the inguinal hernia by means of Bassini technique. The primary suture of the operative wound ended the surgery. This was preceded by the local antiseptic cleaning of the subcutaneous tissue and the placement of a subcutaneous drain.

The postoperative course was favorable, with the resumption of bowel transit and the removal of the peritoneal drain on the second postoperative day. The subcutaneous drain was removed on the third postoperative day. The preoperative antibiotic treatment was stopped on the fourth postoperative day, the patient being discharged on the fifth day after surgery. The anatomo-pathological examination confirmed the presence of perforated gangrenous appendicitis and periappendicular abscess.

The patient was called for control at 3 and 9 months after the surgery. Both examinations revealed no hernia recurrence.

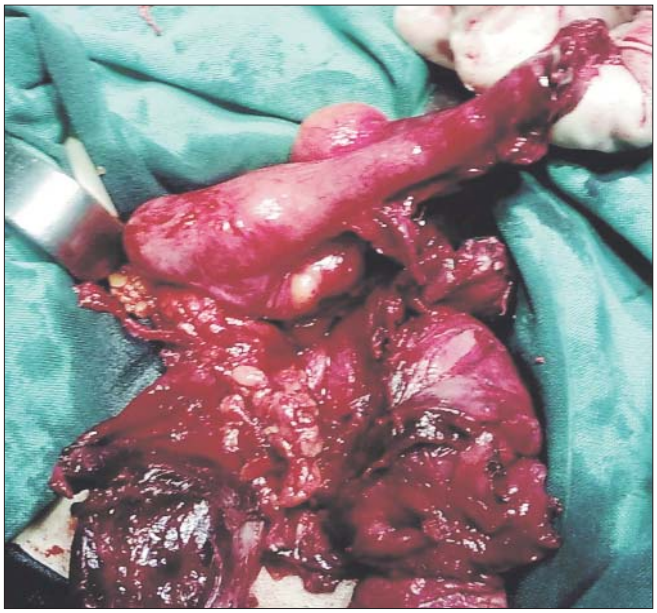

Figure 1. *Gangrenous appendix, perforated at the top*

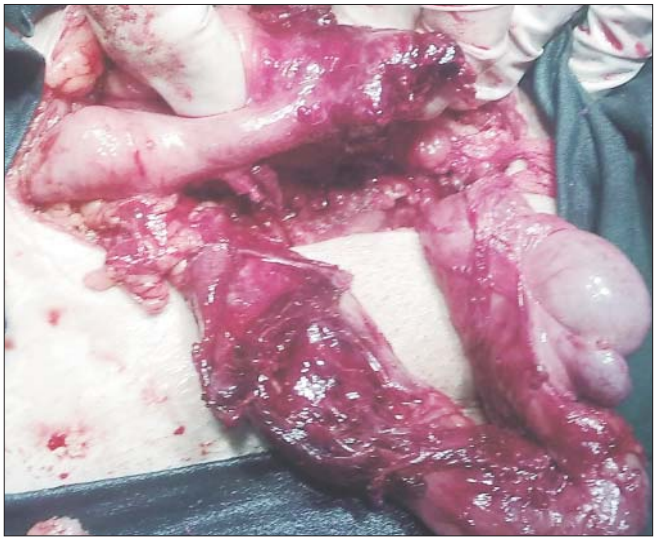

Figure 2. *Perforated appendix is detached from hernia sac*

Figure 3. *Appendectomy*

Discussion

The surgical treatment of inguinal hernia is one of the most common procedures performed by a surgeon during his career. Quite often, the hernial sac may include the bladder, the sigma, a uterus annex or a Meckel diverticulum, but evidence of a vermiform appendix at this level is rare.

The symptomatology is uncharacteristic and aggravates the preoperative diagnosis. Just as in our case, the most frequent indication for surgery is the suspicion of incarcerated or strangulated inguinal hernia. Although we are not advocates of paraclinical examinations for incarcerated inguinal hernia, a preoperative abdominal CT in patients who show signs of acute appendicitis associated with hernia formation can lead to Amyand's hernia diagnosis. We did not carry out any other paraclinical examinations and indicated emergency surgery considering the case as strangulated inguinal hernia.

Choosing the optimal procedure for Amyand's hernia treatment depends mainly on the condition of the appendix, which is also confirmed by other authors (2-5). There are opinions according to which, carrying out a subumbilical median laparotomy in case of gangrenous perforated appendicitis, with abscess in the hernia sac, would be preferable for a better exploration of the peritoneal cavity and for a safe appendectomy (4, 5). We preferred performing an appendectomy on the inguinal incision line after discharging the abscess from the hernia sac, without encountering any major difficulty or intraoperative incident during surgery.

The parietal defect was repaired using an endogenous tissue repair process (Bassini). We didn't use an alloplastic (mesh) procedure due to the presence of gangrenous appendicitis and abscess in the hernia sac, as well as the inflammatory signs in the inguinal canal. Such hernias hold a high risk of prosthesis infection that can be followed by major complications and formidable sequelae, all authors dealing with Amyand's hernia with abscess in hernia sac in the same manner (6-11). This reduces the risk of postoperative infection and morbidity, but instead it increases the risk of recurrence (3, 10).

We considered it necessary to place the drain at the level of the Douglas as the vermiform appendix had a gangrenous appearance and the clogging of the appendicular stump was performed in a cardboard-like check, inflamed and edematous. In these circumstances, the risk of caecal fistula is high, and the presence of the drain may indicate a timely diagnosis although there are authors who "do not believe that there is any advantage in providing an intraperitoneal drain even with intraperitoneal sepsis associated". (12)

The orchiectomy was not performed since the elements of the funicul were viable, although the patient's advanced age and the presence of inflammation at this level increased the postoperative septic and ischemic risks.

We conducted primary operative wound suture (after placing a subcutaneous drain tube) with a favorable evolution, although some authors argue that the risk of infectious complications in the wound is high (6, 12). We believe that an abundant lavage of the wound and a rigorous local treatment with antiseptics combined with systemic antibiotic therapy (pre, intra and postoperative) with broad spectrum allow the optimal wound healing.

Given the advanced age and associated comorbidities of the patient, we consider that the presented case was a true surgical success, especially due to the fact that the literature cites a high rate of septic complications and a 14-30 % mortality associated to Amyand hernias (13, 14).

Conclusion

Amyand's hernia diagnosis overlaps that of incarcerated or strangulated inguinal hernia and it is almost exclusively intraoperative. The optimum treatment depends mainly on the condition of the vermiform appendix. The incarceration of the vermiform appendix in an inguinal hernia sac followed by its perforation and abscess formation at the level of the hernia sac is extremely rare, and many surgeons might not encounter it in their entire career. Both the rarity of the disease and the chosen treatment procedure give particularity to the presented case.

References

1. Gurer A, Ozdogan M, Ozlem N, Yildirim A, Kulacoglu H, Aydin R. Uncommon content in groin hernia sac. Hernia. 2006;10(2):152-5. Epub 2005 Sep 20.
2. Sharma H, Gupta A, Shekhawat NS, Memon B, Memon MA. Amyand's hernia: a report of 18 consecutive patients over a 15-year period. Hernia. 2007;11(1):31-5. Epub 2006 Sep 26.
3. Losanoff JE, Basson MD. Amyand hernia: a classification to improve management. Hernia. 2008 Jun;12(3):325-6. Epub 2008 Jan 24.
4. Salemis NS, Nisotakis K, Nazos K, Stavrinou P, Tsohataridis E. Perforated appendix and periappendicular abscess within an inguinal hernia. Hernia. 2006;10:528-30.
5. Kueper MA, Kirschniak A, Ladurner R, Granderath FA, Konigsrainer A. Incarcerated recurrent inguinal hernia with covered and perforated appendicitis and periappendicular abscess: case report and review of the literature. Hernia. 2007;11(2):189-91. Epub 2006 Dec 13.
6. Ranganathan G, Kouchupapy R, Dias S. An approach to the management of Amyand's hernia and presentation of an interesting case report. Hernia. 2011;15(1):79-82. Epub 2009 Dec 29.
7. Kwok CM, Su CH, Kwang WK, Chiu YC. Amyand's hernia - case report and review of literature. Case Rep Gastroenterol. 2007;1(1):65-70.
8. Solecki R, Matyja A, Milanowski W. Amyand's hernia: a report of two cases. Hernia. 2003;7(1):50-1. Epub 2002 Nov 1.
9. Priego P, Lobo E, Moreno I, Sánchez-Picot S, Gil Olarte MA, Alonso M, et al. Acute appendicitis in an incarcerated crural hernia: analysis of our experience. Rev Esp Enferm Dig. 2005; 97(10):707–715.
10. Kidmas AT, Iya D, Yilkudi MG, Nnadozie U. Acute appendicitis in inguinal hernia: report of two cases. East Afr Med J. 2004;81(9):490-1.
11. Șavlovschi C, Brănescu C, Șerban D, Tudor C, Găvan C, Shanabli A, et al. Amyand's hernia--a clinical case. Chirurgia (Bucur). 2010;105(3):409-14. [Article in Romanian]
12. Tisdale JB, Barwell NJ. Amyand's hernia and peri-appendicular abscess in primary care. Hernia. 2008;12(3):311-2. Epub 2007 Nov 8.
13. Meinke AK. Review article: appendicitis in groin hernias. J Gastrointest Surg. 2007;11(10):1368–1372.
14. D'Alia C, Lo Schiavo MG, Tonante A, Taranto F, Gagliano E, Bonanno L, et al. Amyand's hernia: case report and review of the literature. Hernia. 2003;7(2):89–91.