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World J Gastroenterol 2006 August 7; 12(29): 4761-4763
World Journal of Gastroenterology ISSN 1007-9327

CASE REPORT

Amyand's hernia: A case report

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Received: 2006-03-23 Accepted: 2006-04-24

Abstract

The presence of vermiform appendix in inguinal hernia is rare and is known as Amyand's hernia. We report an Amyand's hernia, where the appendix was found in a right inguinal hernia in one male cadaver aged ninety two years.

Key words: Amyand's hernia; Appendix; Inguinal hernia

Anagnostopoulou S, Dimitroulis D, Troupis TG, Allamani M, Paraschos A, Mazarakis A, Nikiteas NI, Kostakis A. Amyand's hernia: A case report. *World J Gastroenterol* 2006; 12(29): 4761-4763

http://www.wjgnet.com/1007-9327/12/4761.asp

INTRODUCTION

Inguinal hernia may display very unusual sac contents. Ovary, fallopian tube, urinary bladder, incarcerated bladder diverticula, large bowel diverticula with the form of diverticulitis or abscess, Meckel's diverticulum (Littre hernia) or foreign bodies (e.g., fishbones) have been rarely reported[1-3]. The presence of the appendix within an inguinal hernia has been referred to as "Amyand's hernia" to honour Claudius Amyand, surgeon to King George II. Amyand was the first to describe the presence of a perforated appendix within the inguinal hernial sac of an eleven-year old boy and performed a successful transherniotomy appendicectomy in 1735[4,5].

CASE REPORT

In a male cadaver, 92 years old, at the time of death, a right inguinal hernia was recognized during a student descriptive anatomy laboratory. The medical history of the patient included arterial hypertension that had been treated for the past twenty years and the right inguinal hernia (without herniotomy) that had existed for the past ten years. The deep fascia, the external oblique aponeurosis and the spermatic cord were identified, as well as the hernial sac. Upon opening the hernial sac, the vermiform appendix was found free within, without adhesions to the sac (Figure 1, Figure 2, Figure 3). Macroscopically, the vermiform appendix was 8 cm in length with a maximum diameter of 0.9 cm. Histological examination did not reveal any pathological alterations (Figures 4A and B).

DISCUSSION

A hernia is defined as the protrusion of a viscus or part of a viscus through the walls of its containing cavity. The presence of the appendix within an inguinal hernial sac is referred to as "Amyand's hernia" and is an uncommon condition. The incidence of having a normal appendix within the hernial sac varies from 0.5% to 1%, whereas only 0.1% of all cases of appendicitis present in an inguinal hernia, underscoring the rarity of the condition[6,7]. The majority of the reported cases present with the features of an obstructed or strangulated inguinal hernia. Even acute appendicitis or perforation of the appendix within the sac simulates perforation of the intestine within the hernia, and does not have specific symptoms or signs. Due to these facts it is very difficult to reach a clinical diagnosis of Amyand's hernia preoperatively. In fact, the diagnosis is made intraoperatively as the patient undergoes surgical exploration for a complicated inguinal hernia. A preoperative computed tomography scanning of the abdomen could be helpful for diagnosis, but this is not a routine practice after the clinical suspicion of a complicated inguinal hernia[8]. However, one case of a three-month old boy has been reported in which a right-sided sliding appendiceal inguinal hernia was diagnosed preoperatively with sonography[9].

The occurrence of herniated appendices is mostly reported in a right inguinal hernial sac, probably as a consequence of the normal anatomical position of the appendix and also because right sided inguinal hernias

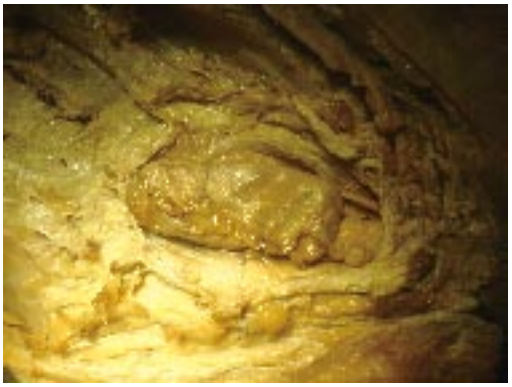

Figure 1 Right inguinal hernial sac.

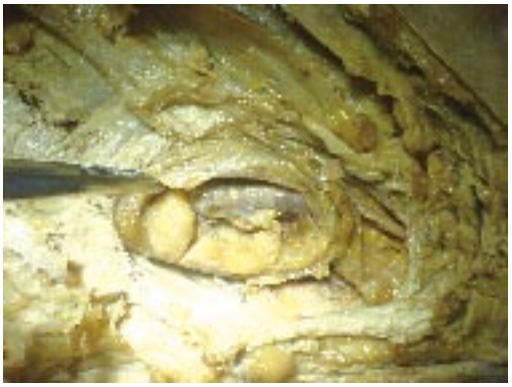

Figure 2 Inguinal hernia with vermiform appendix at the opening of the sac.

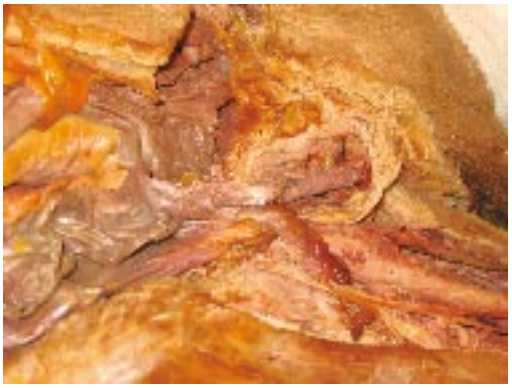

Figure 3 Appendix in inguinal hernia.

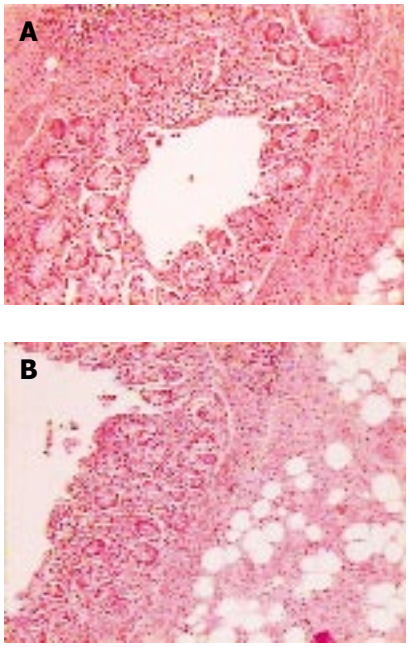

Figure 4 Pathological examination of the appendix found in inguinal hernia. **A**: HE x 100; **B**: HE x 400.

are more common than left sided hernias[10]. An extensive literature search revealed three reported cases of left sided Amyand's hernia[11-13]. The occurrence of left sided Amyand's hernia may be associated with the presence of a situs inversus or malrotation as an underlying cause. An abdominal computed tomography scan or X-ray examination should be performed to exclude these entities[14].

Most of the published cases have been reported as appendicitis incarcerated in a hernia. It is difficult to determine whether a primary visceral inflammation, which could be referred to as appendicitis, is the pathological mechanism, or if the primary event is strangulation of the herniated appendix, leading subsequently to ischemic necrosis and secondary inflammation[15]. The presence or absence of inflammation of the appendix is a very important determinant of appropriate treatment. If inflammation of the organ and incipient necrosis are present, a transherniotomy appendectomy should be performed. The presence of pus or perforation of the organ is also an absolute contraindication to the placement of a mesh for hernia repair. Associated intra-abdominal abscesses, if present, may be dealt with either percutaneously or by open drainage. The majority of the authors agree that a normal appendix within the hernial sac does not require appendectomy, and that every effort should be made to preserve the organ found in the hernia sac for an uneventful postoperative course[16,17].

Finally, we conclude that the presence of the appendix in an inguinal hernial sac, referred to as "Amyand's hernia", is an uncommon entity. Despite its rarity, the fact that the majority of such cases present as a complicated inguinal hernia, making preoperative diagnosis difficult, demands that surgeons consider this condition in their differential diagnosis and so they are able to offer appropriate treatment.

REFERENCES

1 **Gurer A**, Ozdogan M, Ozlem N, Yildirim A, Kulacoglu H, Aydin R. Uncommon content in groin hernia sac. *Hernia* 2006; **10**: 152-155
2 **Greenberg J**, Arnell TD. Diverticular abscess presenting as an incarcerated inguinal hernia. *Am Surg* 2005; **71**: 208-209
3 **Casadio G**, Chendi D, Franchella A. Fishbone ingestion: two cases of late presentation as pediatric emergencies. *J Pediatr Surg* 2003; **38**: 1399-1400
4 **Orr KB**. Perforated appendix in an inguinal hernial sac: Amyand's hernia. *Med J Aust* 1993; **159**: 762-763
5 **Hutchinson R**. Amyand's hernia. *J R Soc Med* 1993; **86**: 104-105
6 **Logan MT**, Nottingham JM. Amyand's hernia: a case report of an incarcerated and perforated appendix within an inguinal

hernia and review of the literature. *Am Surg* 2001; **67**: 628-629
7 **Thomas WE**, Vowles KD, Williamson RC. Appendicitis in external herniae. *Ann R Coll Surg Engl* 1982; **64**: 121-122
8 **Luchs JS**, Halpern D, Katz DS. Amyand's hernia: prospective CT diagnosis. *J Comput Assist Tomogr* 2000; **24**: 884-886
9 **Celik A**, Ergün O, Ozbek SS, Dökümcü Z, Balik E. Sliding appendiceal inguinal hernia: preoperative sonographic diagnosis. *J Clin Ultrasound* 2003; **31**: 156-158
10 **Pellegrino JM**, Feldman SD. Case report: acute appendicitis in an inguinal hernia. *N J Med* 1992; **89**: 225-226
11 **Gupta S**, Sharma R, Kaushik R. Left-sided Amyand's hernia. *Singapore Med J* 2005; **46**: 424-425
12 **Breitenstein S**, Eisenbach C, Wille G, Decurtins M. Incarcerated vermiform appendix in a left-sided inguinal hernia. *Hernia* 2005; **9**: 100-102
13 **Carey LC**. Acute appendicitis occurring in hernias: a report of 10 cases. *Surgery* 1967; **61**: 236-238
14 **Bakhshi GD**, Bhandarwar AH, Govila AA. Acute appendicitis in left scrotum. *Indian J Gastroenterol* 2004; **23**: 195
15 **Weir CD**, Doan SJ, Lughlin V, Diamond T. Strangulation of the appendix in a femoral hernia sac. *Ulster Med J* 1994; **63**: 114-115
16 **Bleichrodt RP**, Simmermacher RK, van der Lei B, Schakenraad JM. Expanded polytetrafluoroethylene patch versus polypropylene mesh for the repair of contaminated defects of the abdominal wall. *Surg Gynecol Obstet* 1993; **176**: 18-24
17 **Franko J**, Raftopoulos I, Sulkowski R. A rare variation of Amyand's hernia. *Am J Gastroenterol* 2002; **97**: 2684-2685

S- Editor Pan BR **L- Editor** Barrett KE **E- Editor** Bai SH