

AMYAND'S HERNIA - A RARE SLIDING HERNIAAditya Adhav¹¹General Surgeon, Department of General Surgery, Adhav Hospital, Shivajinagar, Nasik.**ABSTRACT****BACKGROUND**

The presence of vermiform appendix in inguinal hernia, referred to as Amyand's hernia, is a rare occurring in about 1% of inguinal hernias. This is a report of Amyand's hernia, which presented as a sliding component in a right inguinal hernia in a male patient. Appendicectomy and herniotomy were performed, with an uneventful postoperative recovery.

KEYWORDS

Amyand's Hernia, Appendiceal Sliding Hernia, Inguinal Hernia.

HOW TO CITE THIS ARTICLE: Adhav A. Amyand's hernia - A rare sliding hernia. Journal of Evolution of General Surgery and Laparoscopy 2016; Vol. 2, Issue 2, July-December 2016; Page:11-13.

BACKGROUND

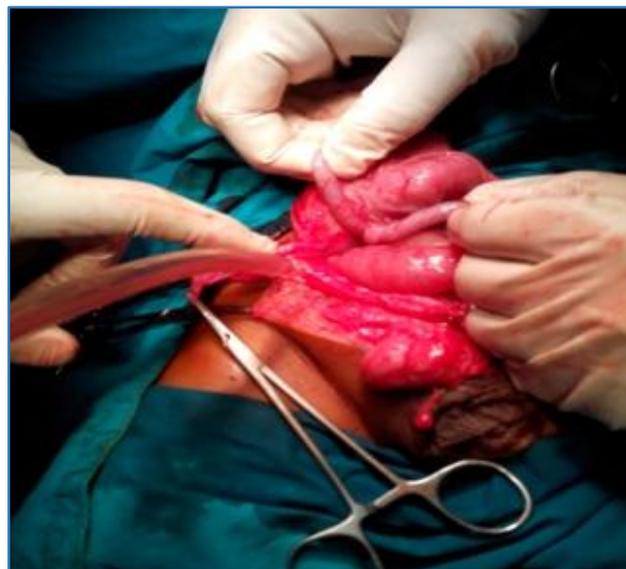
The contents of inguinal hernia sacs differ from case to case. Various structures contained therein have been described, but the presence of the appendix in an inguinal hernia sac is rare.

This anomaly was first described by Claudius Amyand in an 11-year-old boy who underwent a successful appendicectomy in 1735.^{1,2} The incidence of appendicitis within an inguinal hernia is estimated at 0.07–0.13%.^{1,3,4,5} The eponym Amyand's hernia was first coined by Creese in 1953, then by Hiatt in 1988, followed by Hutchinson in 1993.^{6,7,8,9} We report a case of Amyand's hernia.

CASE REPORT

A 19-year-old male was admitted for right inguinal hernia repair. He had the hernia for six months. It was increasing in size, especially during walking, but was reducible upon lying down. Examination showed swelling in the right inguinal region, which was nontender, reducible, and had a positive cough impulse.

The patient underwent all investigations for per anaesthesia fitness and was posted for surgery after getting fitness. Per-operatively, he was found to have a hernia sac containing an appendix (Figure 1 & 2). An appendicectomy and herniotomy repair were performed. The patient had an unremarkable recovery and was discharged ten days after the surgery. He was seen for follow-up after one month; the incision site was uninfected.

**Figure-1****Figure-2**

Financial or Other, Competing Interest: None.

Submission 07-09-2016, Peer Review 01-12-2016,

Acceptance 08-12-2016, Published 31-12-2016.

Corresponding Author:

Dr. Aditya Adhav,

Adhav Hospital,

Shivajinagar,

Nasik-422006.

E-mail: adityaadhav25@gmail.com

**DISCUSSION**

A hernia is the protrusion of the viscus or a part of the viscus through the wall of its containing cavity. By far the most commonly encountered hernia is in the inguinal region which also normally contains bowels or omentum. Among the unusual contents are the bladder, Meckel's diverticulum (Known as Littre's hernia), or a portion of the circumference

of the intestine (Called Richter’s hernia). French surgeon Rene-Jacques Croissant de Garengot described the presence of an appendix within the femoral hernia sac, the so-called de Garengot hernia.¹⁰ But Amyand’s hernia is relatively unknown despite being first reported in 1735 by Claudius Amyand.¹ The term Amyand’s hernia is used to refer to a hernial sac containing an inflamed or non-inflamed appendix in an irreducible inguinal hernia.¹¹ Losanoff and Basson suggested a distinct classification to improve the management of Amyand’s hernias.^{12,13} In the type 1 Amyand’s hernias (Appendix not inflamed), appendicectomy is not routinely undertaken unless the patient is young. In types 2, 3, and 4 Amyand’s hernias (Inflamed appendix), appendicectomy is routine (See Table 1).

| Classification | Description | Surgical Management |
|----------------|--|--|
| Type 1 | Normal appendix in inguinal hernia | Hernia reduction, mesh repair; appendicectomy in young patients. |
| Type 2 | Acute appendicitis within an inguinal hernia and no abdominal sepsis | Appendicectomy through hernia; primary repair of hernia; no mesh |
| Type 3 | Acute appendicitis within an inguinal hernia or the abdominal wall, or peritoneal sepsis | Laparotomy; appendicectomy; primary repair of hernia; no mesh |
| Type 4 | Acute appendicitis within an inguinal hernia with related or unrelated abdominal pathology | Manage as hernias type 1–3; investigate or treat second pathology as appropriate |

The incidence of a normal appendix being found inside an inguinal hernia sac is about 1%; however, only 0.1% of these cases have appendicitis. Solecki et al observed that acute appendicitis was found in 0.62% of all groin hernia sacs.^{14,15} In most of the patients who present with a right-sided Amyand’s hernia, its location can be explained by the normal anatomical position of the appendix; also, right sided inguinal hernias are more common, however, left-sided Amyand’s hernias have also been described in the literature and may be associated with situs inversus, malrotation of the gut, long appendix or mobile caecum.¹¹ The pathophysiology of Amyand’s hernia is unknown. Weber et al proposed that due to herniation the appendix can become more vulnerable to micro-trauma, causing adherence to the hernia sac due to fibrosis.¹⁶ This hypothesis that inflammatory swelling may lead to incarceration, subsequent impaired blood supply, and bacterial overgrowth was supported by Abu Dalu, Barut, and House.^{17,18,19} Muscle contractions and changes in abdominal pressure can cause compression of the appendix, resulting in reduced blood supply and secondary inflammation.¹⁵ Diagnosing Amyand’s hernia pre-operatively is not straight forward. In the majority of cases, it is diagnosed when the hernia sac is opened, as most patients undergo emergency surgery. Although a preoperative computed tomography (CT) scan of the abdomen can be helpful in diagnosing the condition, it is not routinely employed in such cases. If the

diagnosis is established by CT, it is possible to treat Amyand’s hernia laparoscopically.²⁰ The recommended treatment is appendicectomy with primary hernia repair. Use of synthetic mesh is avoided in the repair of contaminated abdominal defects because prosthetic material can increase the inflammatory response and result in wound infection and a rare but possible complication of appendiceal stump fistula.²¹ Preigo et al carried out appendectomies in six patients, using mesh in three. One patient developed a wound infection after being treated with mesh.²² Bailey reported a wound infection rate of 3% in hospital that went up to 9% in community surveillance.²³ However, Saggar et al. reported laparoscopic total extraperitoneal repair with mesh in a right-sided incarcerated inguinal hernia without any complications.²⁴ We performed appendicectomy considering the young age of the patient.

CONCLUSIONS

Amyand’s hernia is a rare clinical entity that is difficult to diagnose pre-operatively clinically. The presence of an inflamed or gangrenous appendix increases the rate of complication, particularly increasing the rate of wound infection. Diagnosis is usually made at the time of surgery. Consequently, our recommendation is that the decision to perform an appendicectomy and/or to use mesh to repair hernias should always be individualised.

REFERENCES

- Orr KB. Perforated appendix in an inguinal hernial sac: Amyand’s hernia. *Med J Aust* 1993;159(11-12):762-3.
- Hutchinson R. Amyand’s hernia. *J R Soc Med* 1993;86(2):104-5.
- Lawrence IE, Chad HF. Acute appendicitis in a femoral hernia: an unusual presentation of a groin mass. *The Journal of Emergency Medicine* 2002;23(1):15-8.
- 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(7):628-9.
- Osorio JK, Guzman-Valdivia G. Ipsilateral Amyand’s and Richter’s hernia, complicated by necrotising fasciitis. *Hernia* 2006;10(5):443-6.
- Constantine S. Review of literature: computed tomographic appearances of Amyand’s hernia. *J Comput Assist Tomogr* 2007;33:359–62.
- D’Alia C, Lo Schiavo MG, Tonante A, et al. Amyand’s hernia: case report and review of the literature. *Hernia* 2003;7(2):89–91.
- Carey LC. Acute appendicitis occurring in hernias: a report of 10 cases. *Surgery* 1967;61(2):236–8.
- Gupta S, Sharma R, Kaushik R. Left-sided Amyand’s hernia. *Singapore Medical Journal* 2005;46(8):424–5.
- Komorowski AL, Rodriguez JM. Amyand’s hernia. Historical perspective and current considerations. *Acta Chirurgica Belgica* 2009;109(4):563–4.
- Bakhshi GD, Bhandarwar AH, Govila AA. Acute appendicitis in left scrotum. *Indian J Gastroenterol* 2004;23(5):195.
- Losanoff JE, Basson MD. Amyand hernia: what lies beneath—a proposed classification scheme to determine management. *American Surgeon* 2007;73(12):1288–90.

13. Losanoff JE, Basson MD. Amyand hernia: a classification to improve management. *Hernia* 2008;12(3):325–6.
14. Yazicioglu M, Yavas Y, Polat C. Amyand's hernia: a case report. *Case Rep Clin Prac Rev* 2007;8:321–3.
15. Solecki R, Matyja A, Milanowski W. Amyand's hernia: a report of two cases. *Hernia* 2003;7(1):50–1.
16. Weber RV, Hunt ZC, Kral JG. Amyand's hernia: etiologic and therapeutic implications of two complications. *Surg Rounds* 1999;22:552–6.
17. Dalu AJ, Udra I. Incarcerated inguinal hernia with a perforated appendix and periappendicular abscess. *Dis Colon Rectum* 1972;15(6):464–5.
18. Barat I, Tarhan DR. A rare variation of Amyand's hernia: gangrenous appendicitis in an incarcerated inguinal hernia sac. *Eur J Gen Med* 2008;5(2):112–4.
19. House MG, Goldin SB, Chen H. Perforated Amyand's hernia. *South Med J* 2001;94(5):496–8.
20. Vermillion JM, Abernathy SW, Snyder SK. Laparoscopic reduction of Amyand's hernia. *Hernia* 1999;3(3):159–60.
21. Javaid M, Rahman N, Manzar S. Amyand's hernia: appendix within an inguinal hernia. *Pak J Surg* 2006;22:181–2.
22. Priego P, Lobo E, Moreno I, et al. Acute appendicitis in an incarcerated crural hernia: analysis of our experience. *Rev Esp Enferm Dig* 2005;97(10):707–15.
23. Bailey IS, Karran SE, Toyn K, et al. Community surveillance of complication after hernia surgery. *BMJ* 1992;304(6825):469–71.
24. Saggarr VR, Suigh K, Sarngi R. Endoscopic total extraperitoneal management of Amyand's hernia. *Hernia* 2004;8(2):164–5.