# Amyand hernia with appendicitis

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## Abstract

The term Amyand hernia refers to presence of appendix within inguinal hernia. The incidence of having a normal appendix within inguinal hernia is about 1%, whereas the finding of appendicitis in the inguinal hernia is only 0.1%.

## Case Report

A 27-year-old female presented with right lower quadrant pain, which was associated with nausea, few episodes of emesis and low grade fever. On examination, female had a temperature of 39°, pulse rate of 100/min and blood pressure of 120/80 mmhg. Per abdominal examination revealed tenderness at Mc Burney's point. Ultrasound examination suggested Mesenteric adenopathy with minimal free fluid and gestational sac of 5 weeks with blighted ovum. On laparoscopy, inflamed appendix was seen entering the inguinal canal through deep ring along with small bowel (Figure 1). Length of appendix was 9 cm with maximum diameter was 8 mm Laparoscopy appendectomy with reduction of hernial sac was performed. Dilatation and evacuation for blighted ovum was performed. Post operative course was unremarkable. Histopathological examination of appendectomy specimen showed changes of acute appendicitis. Hernioplasty had not been performed at the same time due to presence of infective process in the body. Patient had been explained regarding future consequences of recurrence. Patient came back for repair of hernia after 4 month and hernioplasty had been performed. Patient is in follow up since last six month without recurrence.

## Discussion

The credit for performing first appendectomy goes to Claudius Amyand, sergeant surgeon to King George I, King George II, and Queen Ann. He was the first to describe presence of perforated appendix with in a hernial sac of 11 year old boy. An 11-year-old guy, Hanvil Anderson, had a right inguinal hernia with fecal fistula. He successfully performed appendectomy and repair the hernia on 6th of December, 1735.[1] He took approximately half an hour to complete the surgery and after completion of operation, he commented that *Tis easy to conceive that this operation was as painful to the patient as laborious to me*.[1] This operation was not only the first to describe hernia containing vermiform appendix but also one of earliest documented appendectomy in the literature.[2]

The term Amyand hernia refers to presence of appendix within inguinal hernia. Hernia is abnormal protrusion of viscus or part of viscus through a normal or abnormal opening, from the cavity which contains it. The common contents are either omentum or intestine. Unusual contents may be encountered, such as Meckel's diverticulum (Littre's hernia), or a portion of circumference of intestine (Richter's hernia). The presence of appendix with in femoral hernia sac is referred as De Garengeot hernia.[3] A normal appendix within inguinal hernia is estimated to be found in 1%. The finding of appendicitis in the inguinal hernia is only 0.1%.[4] Amyand hernia with pregnancy is a rare combination. To my knowledge, this is the first case of Amyand hernia combined with pregnancy and managed through laparoscopy. Pre-operative diagnosis of Amyand hernia is difficult. Because of anatomical location Amyand hernia is almost always on the right side. However, extensive literature search revealed 8 cases of left sided Amyand hernia.[5-12] There are four conditions responsible for left sided Amyand hernia: situs inversus, mobile cecum, malrotation of intestine, and excessively long appendix.

Acute appendicitis in hernia sac is rarely diagnosed preoperatively and often misdiagnosed as either testicular torsion or epididymo orchitis. Although CT abdomen may be of help in reaching the correct diagnosis, it is not routine when diagnosis of appendicitis is sure. It remains integral to preoperative diagnosis. The American College of Radiology recommends the use of nonionizing radiation techniques for front-line imaging in pregnant women.[13] Treatment of Amyand hernia includes either open or laparoscopic appendectomy along with hernia repair.[5,14] Most authors believe that presence of normal appendix does not require surgical removal and every effort should be made to preserve the normal appendix.[15] It is very difficult to determine whether visceral inflammation is the primary process or strangulation of appendix within the sac is responsible for ischemia and necrosis.[16] Losanoff described management of Amyand hernia. Losanoff type I (Normal appendix within sac) should be managed by hernioplasty without appendectomy and Losanoff type II-IV (acute appendicitis within sac) requires appendectomy followed by hernia repair without prosthesis.[17] Johari *et al.*[11] suggested appendectomy in case of left sided Amyand hernia irrespective of condition of the appendix. The reason for appendectomy in normal looking appendix on left side is any future appendicitis will have an atypical presentation and can cause diagnostic confusion. Prosthesis should not be used in the repair of contaminated abdominal wall defects because it can increase the inflammatory response and result in surgical site infection and a possible appendicular stump fistula.[5]

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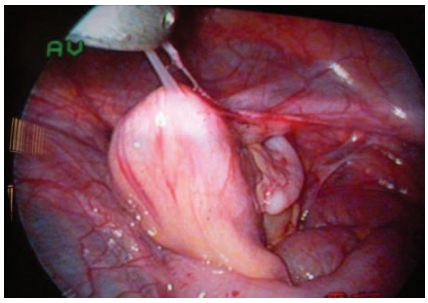

**Figure 1. Inflamed appendix with in opened hernial sac.**

## Conclusions

The presence of appendix with in hernial sac is referred as Amyand hernia. Appendicitis within an Amyand hernia is rare. Pre-operative diagnosis is difficult. CT may helps in correct pre-operative diagnosis. Presence of infection is an absolute contraindication for placement of prosthesis.

## References

1. Amyand C. Of an inguinal rupture, with a pin

in the appendix caeci incrusted with stone, and some observations on wound in the guts. Phil Trans R Soc Lond 1736;39: 329-42.
2. Komorowski AL, Moran Rodriguez J. Amyand's hernia. Historical perspective and current considerations. Acta Chir Belg 2009;109:563-4.
3. Bhalla A, Bhalla V. De Garengeot Hernia: a case study and literature review. The Internet Journal of Surgery. 2007 Volume 13 Number 1.
4. 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;67:628-9.
5. Carey LC. Acute appendicitis occurring in hernias: a report of 10 cases. Surgery 1967;61:236-8.
6. Bakhshi GD, Bhandarwar AH, Govila AA. Acute appendicitis in left scrotum. Indian J Gastroenterol 2004;23:195.
7. Breitenstein S, Eisenbach C, Wille G, Decurtins M. Incarcerated vermiform appendix in a left-sided inguinal hernia. Hernia 2005;9:100-2.
8. Gupta S, Sharma R, Kaushik R. Left-sided Amyand's hernia. Singapore Med J 2005; 46:424-5.
9. Gupta N, Vinay Wilkinson TR, Wilkinson A, Akhtar M. Left-sided incarcerated Amyand's hernia. Indian J Surg 2007;69: 17-18.
10. Tayade MB, Bakhshi GD, Borisa AD, et al. A rare combination of left sided Amyand's and Richter's hernia. Bombay Hospital Journal 2008;50:644-5.
11. Johari HG, Paydar S, Davani SZ, et al. Left-sided Amyand hernia. Ann Saudi Med 2009;29:321-2.
12. Khan R, Wahab S Ghani I. Left-sided strangulated Amyand's hernia presenting as testicular torsion in an infant. Hernia 2011;15:83-4.
13. Bree RL, Ralls PW, Balfe DM, et al. Evaluation of patients with acute right upper quadrant pain. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000;215 Suppl:153-7.
14. Vermillion JM, Abernathy SW, Snyder SK. Laparoscopic reduction of Amyand's hernia. Hernia 1999;3:159-60.
15. Franko J, Raftopoulos I, Sulkowski R. A rare variation of Amyand's hernia. Am J Gastroenterol 2002;97:2684-5.
16. Weir CD, Doan SJ, Lughlin V, Diamond T. Strangulation of the appendix in a femoral hernia sac. Ulster Med J 1994;63: 114-5.
17. Losanoff JE, Basson MD. Amyand hernia: what lies beneath--a proposed classification scheme to determine management. Am Surg 2007;73:1288-90.