

## Case Report

# Amyand's Hernia: The Case Report of a Rare Hernia

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## Abstract

**Background:** The term Amyand's hernia refers to a rare clinical situation characterized by the presence of a normal or inflamed appendix within the sac of an inguinal hernia. This may present as any other inguinal hernia without any signs of inflammation. It may also present as an incarcerated hernia or acute appendicitis occurring inside the hernia sac.

**Case presentation:** We present the case of a left Amyand's hernia on a 2-years-old male child. He was admitted with swelling of left side of scrotum. This swelling was irreducible and non tender. There were no signs of inflammation. The USG exam showing loops of bowel in the hernia sac. The patient planned for elective surgery. On operation we found that the hernia sac is containing terminal ileum, caecum and appendix. The contents deposited back in the abdomen and Herniotomy done. The post-operative recovery was uneventful.

**Conclusion:** Left-sided incarcerated Amyand's hernia with caecum, appendix and terminal ileum as its content is a rare clinical entity. Surgeons should have a high index of clinical suspicion and be aware of the potential involvement of appendix, caecum, and ileum as part of an incarcerated hernia during surgery, even on the left side. In this case, left-sided incarcerated inguinal hernia which contained normal appendix, caecum, and terminal ileum was successfully managed using an inguinal approach.

**Keywords:** Inguinal hernia; Appendix; Incarcerated hernia; Amyand's hernia

## Introduction

Sir Astley Cooper defined a hernia in the year 1800 as "the Hernia is a protrusion of any viscus from its proper cavity. The protruded part is generally contained in a sac-like structure formed by the membrane with which the cavity is naturally lined" [1]. Schwartz et al. [2] defined a hernia as protrusion of a viscus through an opening in the wall of a cavity in which it is contained. A normal or inflamed vermiform appendix found inside an inguinal hernia sac is called Amyand's hernia, in honour of the surgeon Claudius Amyand who first reported this interesting entity in 1735 [3].

Claudius Amyand (1660-1740), a French surgeon working at St George's and Westminster hospitals in London, performed the first successful appendectomy in 1735, on an 11-year-old boy who presented with an inflamed, perforated appendix in his inguinal hernia sac. According to the surgeon's descriptions, the patient also had "a fistula between the scrotum and thigh" and the operation proved to be "very complicated and perplexing," as the pathology consisted of a chronically inflamed appendix contained within the inguinal hernia sac, perforated by a previously swallowed pin. At surgery the appendix was removed. The patient eventually recovered and was "discharged with a truss, which he was ordered to wear for some time." The case was published in the Philosophical Transactions of the Royal Society of London [4].

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Amyand's hernia predominantly occurs on the right side [5]. This may be because of more common occurrence of right-sided inguinal hernias as compare to left-sided hernias, and also the anatomical position of appendix on right side. Left-sided Amyand's hernias are rare, and it has been suggested that they could be associated with a mobile caecum, situs invertus, or intestinal malrotation [6]. Even though there are previous case reports on Amyand's hernia from overseas [7]. Scientific literature has sparse data on left sided Amyand's hernia. Therefore, we report a case of left-sided incarcerated Amyand's hernia, in a two year old male child.

## Case Presentation

A two year old child was admitted to the Department of Surgery, SBRKM Government medical college, Jagdalpur (Bastar) C.G., INDIA with the complains of swelling on left side of scrotum. The parents gave the history of presence of swelling on left side of scrotum since birth, they also mentioned that the swelling was reducible and there was no associated problem. Since past one week the swelling became irreducible and the child was complaining pain during touching it. The bowel, bladder habits were not impaired. The ultrasound study of abdomen and scrotum show the presence of bowel in the scrotal sac. The routine blood and other investigations were within normal limits. The child was taken for surgery. On opening the inguinal canal, there was presence of a constricting ring at internal inguinal ring. The constriction released and contents inspected. The hernia sac was containing the terminal ileum, caecum and vermiform appendix (Figure 1). The appendix was not inflamed. The contents were reduced to abdomen and herniotomy done.

Postoperatively, the patient was evaluated for presence of situs invertus if any. The physical examination coupled with abdominal ultrasound excluded this possibility. The presence of mobile caecum is the most probable explanation of terminal ileum and caecum along with appendix as the content of inguinal hernial sac. The post-operative recovery was smooth and uneventful.



**Figure 1:** The Amyand's hernia.

## Discussion

An inguinal hernial sac with vermiform appendix as its content is termed as Amyand's Hernia (AH). The definition includes normal, inflamed as well as perforated appendix. It is named after Claudius Amyand, a surgeon, who is thought to have been the first person to perform a successful appendectomy of a perforated appendix in an inguinal hernia [3]. AH is not a common hernia and the incidence varies from 0.28% to 1%, the sac containing inflamed appendix is still less (0.07% to 0.13%). They are usually right-sided as the appendix is a right-sided organ, though left-sided hernias can also occur. Appendicitis is thought to be caused by compression on the appendix at the base of the hernia rather than intraluminal obstruction. In a 2003 study by D'Alia C et al. [8] only one case of acute appendicitis within an inguinal hernia in 1,341 repair operations was described.

In Amyand's hernia pre-operative diagnosis is not possible and it is established only during surgical intervention. The computerised tomography may be helpful, but this is not a part of pre-operative workup in a simple looking reducible or incarcerated inguinal hernia. The differential diagnosis may include strangulated hernia, Richter's hernia, orchitis, omentocele, inguinal lymphadenitis, epididymitis and hemorrhagic testicular tumor [9].

## The Management

### It depends upon

In the case of a normal appendix, incidentally found within the hernia sac, the performance of a prophylactic appendectomy along with the hernia repair is not recommended [10]. It is because the Appendectomy adds to the risk of infection to an otherwise clean procedure. In addition, surgical manipulation to achieve visualization of the entire appendix and its base, by enlarging the hernial defect or distending the neck of the hernial sac, increases the possibility of recurrence by weakening the anatomic structures around the defect [11].

**Table 1:** Losanoff and Basson's classification of Amyand's Hernia.

Classification	Description	Surgical management
Type 1	Normal Appendix within a inguinal hernia.	Hernia reduction, mesh repair, appendectomy in young patients.
Type 2	Acute appendicitis within an inguinal hernia, no abdominal sepsis.	Appendectomy through hernia, primary endogenous repair of hernia, no mesh.
Type 3	Acute appendicitis within an inguinal hernia, abdominal wall or peritoneal sepsis.	Laprotomy, appendectomy, primary repair of hernia, no mesh.
Type 4	Acute appendicitis within an inguinal hernia, related or unrelated abdominal pathology.	Manage as types 1 to 3 hernia, investigate or treat second pathology as appropriate.

Losanoff and Basson have distinguished four basic types of Amyand's hernias, which should be treated differently (Table 1) [12,13].

In our case report the left sided incarcerated Amyand's hernia was most probably due to mobile caecum, and so sac was containing appendix, caecum and terminal ileum as its content. This finding is consistent with the case reports of other authors that showed underlying causes of Amyand's hernia [14,15].

Our case report is consistent with losnoff and bassoon classification type 1. In this type of hernia the contents are normal appendix and it is managed by reduction of the contents and mesh repair. In the case report by the author, the child is two year of age and it is congenital inguinal hernia. In the congenital inguinal hernia the basic pathology is patent processus vaginalis and there is no weakness of posterior abdominal wall of the inguinal canal [16]. Thus, the appropriate management consists of herniotomy only. There is no need to strengthen the posterior wall by mesh repair. The same has been carried out in our case.

## Conclusion

The Amyand's hernia is rare, and it is commonly found on right side. The incidence of left sided Amyand's hernia is further less. The appendix in the sac may or may not be infected. The definite diagnosis is usually reached intra-operative only. However surgeon should have a high degree of clinical suspicion and awareness of this clinical entity. He should be aware that even on left side the hernial sac may contain terminal ileum, caecum and appendix. In this case report, our patient was successfully managed using an inguinal approach.

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