

Complicated Left-Sided Amyand's Hernia in an 18-Month-Old Boy: A Case Report and Literature Review

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Received 25 November 2015; accepted 12 January 2016; published 15 January 2016

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Abstract

The rare finding of the vermiform appendix within an inguinal hernia sac is known as Amyand's hernia. It was first described by Claudius Amyand in 1735, in a right inguinal hernia. A much rarer find is a left-sided Amyand's hernia. This is a report of a case of complicated left-sided Amyand's hernia in an eighteen month old male child. He presented as an emergency with an obstructed inguino-scrotal hernia and the diagnosis of Amyand's hernia was made intra-operatively. He made uneventful recovery after surgery. Treatment options depend on findings during operation and clinical status of the patient.

Keywords

Obstructed Hernia, Vermiform Appendix, Left-Sided

1. Introduction

In the year 1735, a surgeon named Claudius Amyand performed a right inguinal hernia operation for an 11-year-old male patient named Havil Henderson and found the vermiform appendix in the hernia sac [1] [2]. He subsequently published his findings in 1736 in the Philosophic Transactions of the Royal Society [3] [4]. Subsequently, the finding of the vermiform appendix in a hernia sac has been ascribed the eponym Amyand's hernia. This makes no distinction of whether the appendix is normal, inflamed or ruptured [3] [5] [6]. The presence of

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the vermiform appendix in a femoral hernia sac is however known as Garengeot's hernia [7].

The incidence of Amyand's hernia is variously reported as ranging from 0.5% to 1% of cases of Appendectomy while an inflamed appendix is seen in 0.08% to 0.1% of cases. [2] [5] [8]. Amyand's hernia is less well known than the much rarer Littre's hernia (Meckel's diverticulum in the sac) although Meckel's diverticulum is rated as being present in 2% of the general population. The age and sex distribution is not known but from reported cases there is a male preponderance. The reported age ranges from a 15-day-old premature neonate to a 92-year-old man [8] [9]. Our search in English literature found a few recorded left-sided cases of Amyand's hernia and none from the West African sub-region. This submission is the first report of a case of left-sided Amyand's Hernia from our practice in Calabar-Nigeria and perhaps the first reported case from West Africa. This case had many peculiarities including a tear in the caecal wall besides being complicated.

2. Case Report

An 18-month-old boy, weighing 8 kg was referred from a private clinic with a 3-day history of sudden onset of abdominal pain maximal over a pre-existing reducible left inguinal swelling. Patient was irritable, vomited once and refused feeds for 2 days. He also developed fever, constipation and abdominal swelling a day before referral.

Clinical evaluation showed an irritable, pale, febrile and dehydrated infant with tachypnoea and tachycardia. The abdomen was moderately distended. Umbilical hernia was present and bowel sounds were hyperactive. He had a hyperaemic, tender, left inguino-scrotal mass but both testes were separately palpable. A working diagnosis of Strangulated Left Inguino-scrotal hernia was made. The patient was rapidly resuscitated and scheduled for an emergency operation. Suddenly, the crying and irritability increased in tempo before the beginning of the operation. It was observed that the scrotum was rapidly increasing in size and tensed with the attendant fear of bursting (Figure 1).

Immediate intervention was done through a left inguinal incision and intra-operative findings were:

- 1) An obstructed, sliding indirect left inguinal hernia sac with faeculent smell.
- 2) The contents of the sac shown in Figure 2.
 - A gush of gas with faeculent odour upon opening the hernia sac.
 - An inflamed (hyperaemic and turgid) vermiform appendix.
 - An enclosed part of the circumference of the caecal wall with a 2 cm linear tear (grasped by Babcock's forceps in Figure 2).
 - A scanty amount of purulent exudates.
 - Viable terminal ileum and caecum.
- 3) Normal left testis and vas deferens

The constricting fascial band at the neck was released. Appendectomy was done, caecal tear closed extra-abdominally with a single layer of Polyglactin 910 sero-muscular suture. Local toileting was done with saline soaked sponge and contents reduced. The hernia sac was closed by purse-string and redundant part excised. Inguinal anatomy was reconstituted over a drain removed after 48 hours. Antibiotic prophylaxis commenced pre-operatively was continued post-operatively in therapeutic doses.



Figure 1. Pre-operative picture showing tense, shiny, scrotal swelling.



Figure 2. Intraoperative picture showing vermiform appendix held with Allis forceps and the tear in the caecal wall held by Babcock forceps.

The postoperative course was uneventful. Patient commenced oral feeding on second post-operative day. He was discharged home on the 5th postoperative day. Abdominal Ultrasound scan and Chest Radiograph were requested. However, the patient was lost to follow-up and never did the requested investigations.

3. Discussion

Amyand's hernia implies that the vermiform appendix is contained within the inguinal hernia Sac [1]-[9]. This usually suggests a right-sided inguinal hernia as the vermiform appendix and caecum are normally found in the right lower quadrant of the abdomen. The incidence of Amyand's hernia ranges from 0.5% to 1% of hernias and almost always an incidental operative finding. Most cases of Amyand's hernia contain a normal appendix while inflamed appendix is noted in 0.08% to 0.1% of cases [2] [5] [8]-[11], thus making it a rare condition.

We note at this point that Amyand's hernia is less often mentioned in the medical literature than the rarer eponymous Littre's hernia. Meckel's diverticulum is said to occur in about 2% of the general population (post-mortem) but this not confirmed from operative findings. The incidence of finding a ruptured appendix in a hernia sac whether Amyand's or not, is not known though expected to be rarer than the inflamed variety. The tear in the caecal wall as noted in this case was spontaneous. This a peculiar isolated finding and perhaps precisely occurred at the time of sudden increase in the tempo of crying and rapid expansion of scrotal size. This tear, in the absence of any gangrenous segment of gut or rupture of the appendix, may be due to a rise in intracaecal pressure above its bursting point especially in the presence of a competent ileo-caecal valve.

Left-sided Amyand's hernia is less reported in literature than the right-sided because the appendix is normally located in the right lower quadrant of the abdomen. Our search in English medical literature produced about 20 reported cases of left-sided Amyand's hernia from all continents and more recently from Africa as well [11]. This is the first report of a case of Left-sided Amyand's hernia from the West African region, and a peculiarly complicated one.

An inguinal hernia sac may be empty or contain omentum, small bowel or both. Atypical cases may contain part of the wall of the caecum or urinary bladder (sliding hernia), vermiform appendix (Amyand's hernia), Meckel's diverticulum (Littre's hernia) or part of the circumference of the bowel wall (Richter's hernia) or even an "arrested testis". We may someday witness an appendix tumour within the hernia sac. It has been suggested that pre-operative investigations such as ultrasonography, hernioscopy, laparoscopy or computed tomography [11] [12] may be helpful for diagnosis. These modalities are usually not employed since diagnosis is made intra-operatively, and will amount to waste of resources and lead to delay in treatment. Amyand's hernia has no typical clinical features. It shares common clinical features with other hernias with the possibility of being complicated by obstruction or strangulation. However, the presence of an inflamed vermiform appendix within a hernia sac will result in accentuated presentation and risk of rupturing or bursting as in our index patient.

Hernia is a surgical disease that requires surgical intervention. In emergency situations like our index case, surgical therapy must be expedited. The proposed management classification by Losanoff and Basson [13] [14] (**Table 1**) may be more useful for right-sided Amyand's hernia diagnosed before operation than for the left-

Table 1. Losanoff and Basson management classification.

Types	Description	Management
Type 1	Normal appendix within hernia sac	Hernioplasty (Mesh repair) without appendectomy
Type 2	Acute appendicitis within the Hernia sac, no abdominal sepsis	Appendectomy and repair of hernia without mesh (herniorrhaphy)
Type 3	Acute appendicitis within the hernia sac with abdominal sepsis	Laparotomy and proceed to appendectomy and primary repair of hernia without mesh
Type 4	Acute appendicitis within the hernia sac, related or unrelated abdominal pathology	Manage as types above, investigate treat secondary pathology as appropriate

sided cases. From our experience herein, we advocate appendectomy in all left-sided cases irrespective of the clinico-pathological status of the appendix. This is justified in that the appendix in the left may lead to misdiagnosis if left *in situ*. Diagnosis of hernia is a normal clinical work up not requiring the various radiographic procedures with their attendant hazards, expense and treatment delay. However, in cases like ours, during the post-operative period, various imaging techniques may be employed to resolve other possible diagnostic dilemma such as situs inversus, malrotation or wandering caecum. The selected modality must be justifiable hence we think that the use of computed tomography will add no advantage.

4. Conclusion

Left-sided Amyand's hernia is an uncommon surgical entity. It is usually a chance finding at operation. It is more likely to harbour an inflamed appendix than the right side. Immediate appendectomy should be done routinely in left-sided Amyand's hernia if only to prevent future diagnostic confusion. The management is incomplete until situs inversus, malrotation or mobile caecum is ruled out.

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