

Amyand's Hernia: An Unexpected Finding in a Routine Procedure. A Case Series

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Abstract

Amyand's hernia is defined by the presence of an appendix in an inguinal hernia. This presentation was previously deemed rare but it was noted that an increasing number of cases are being reported each year. A left sided Amyand's hernia however is still relatively rare compared to the right variant. Appendectomy during hernioplasty is debatable and there is mixed views from surgeons worldwide.

Here we present our experience with a case series of three Amyand's hernia that was seen in a span of three months.

Introduction

Inguinal hernias are a common occurrence in developing countries and patients usually present only when the hernia is causing discomfort or once complication arises. A typical inguinal hernia usually involves the abnormal protrusion of an organ or fascia from the abdominal cavity into the inguinal canal. Amyand's hernia is defined by the presence of an appendix in the inguinal hernia and was first described by Claudius Amyand in 1735 [1].

In 2003 a study by D'Alia et al. showed the incidence of Amyand's hernia to be 0.6% and almost always on the right side [2,3]. To date however we noted an increasing number of case reports on Amyand's hernia being published but a left Amyand's hernia still remains relatively rare with only about 30 cases being reported in the English speaking literature.

The diagnosis of an Amyand's hernia is usually made intraoperatively as it usually presents as an incarcerated inguinal hernia.

There are mixed views on whether appendectomy should be done in cases where the appendix is not inflamed. The aim of this case series is to present the experience of our district hospital with 3 Amyand's hernia cases in a span of 3 months along with a review of the literature.

Case 1

A one year six months old boy presented with pain and swelling over the right groin and scrotum for 1 day. It was sudden onset and according to his parents no swelling was noticed prior to this episode. Patient was brought to the hospital due to persistent crying likely due to pain.

Patient was clinically relatively well with mild dehydration. Abdomen was soft and not distended. There is a right inguinoscrotal swelling which was irreducible. Left testis palpable in the scrotum but right testis not palpable. Ultrasound inguinal-scrotum done and noted findings suggestive of inguino-scrotal hernia with no peristalsis seen from the bowel loops within the hernia.

A diagnosis of incarcerated right inguinal hernia was made and the child was booked for emergency surgery on the same day of admission.

During surgery, a right inguinal incision was made and noted an indirect hernia. Upon opening of the hernia sac we noted the presence of terminal ileum, caecum and appendix within. Appendix appear to be normal, however an appendectomy was done on the discretion of the surgeon as the child was still young. The organs were then reduced into the abdomen cavity followed by herniotomy.

Patient did not show any complications post operatively and was discharged on the next day. He was seen again in surgical outpatient clinic one month post operatively and was noted to be well with no complications from the surgery (Figure 1).

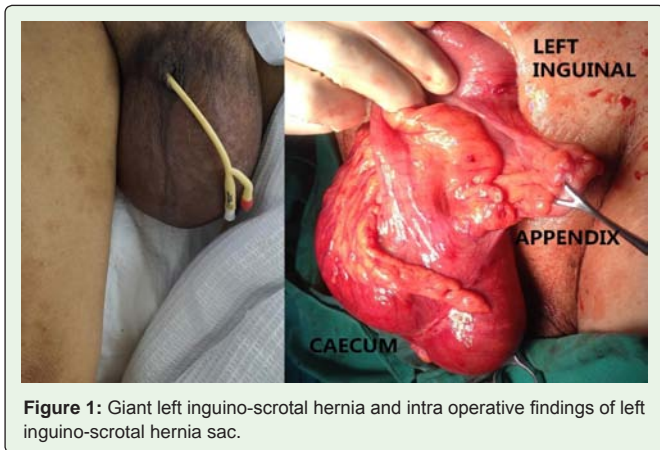


Figure 1: Giant left inguino-scrotal hernia and intra operative findings of left inguino-scrotal hernia sac.

Case 2

An 83 year old gentleman presented with pain and swelling over left groin and scrotum. Pain worsens during ambulation. The swelling was noted since 1 year ago however he did not seek any medical advice due to the fact that it did not cause any discomfort at that time. He did not complain of any obstructive symptoms. History of right hernioplasty done in 2012 and recovered well with no sign of recurrence. He has underlying hypertension and was on regular follow up and medication.

Clinical examination showed that he was stable with unremarkable abdominal examination. On local examination, there was a tender large irreducible left inguino-scrotal swelling reaching mid thigh. Bilateral testes were palpable separately in scrotum. Blood investigations taken and results were within normal ranges. Plain abdominal x-ray showed no dilated bowels.

A diagnosis of incarcerated left inguino-scrotal hernia was made and he was scheduled for surgery the same day as admission.

On the day of surgery (4/6/2017), an incision was made over the left inguinal; an indirect inguinal hernia was identified. The hernia sac opened and noted loops of small bowel, caecum and appendix with adhesions between small bowels and caecum to scrotal wall. Serous fluid collection noted within the distal sac. No inflammation was noted over all mentioned organs and appendectomy was done prior to reduction of the contents back into the abdominal cavity. A Lichtenstein’s hernia repair was done considering no contamination by the appendectomy.

The patient had uneventful recovery and discharged four days after the surgery (Figure 2).

Case 3

77 year old gentleman presented to our out-patient clinic with a right inguino scrotal swelling noted since a year ago and not associated with any other symptoms. It was progressively increasing in size and only able to partially reduce since 1 month ago. Mild discomfort noted while walking but no obstructive symptoms. He has underlying hypertension and a history of cerebrovascular accident and was on aspirin.

Patient was drafted into our elective surgery list and aspirin withheld five days prior to surgery.

Preoperatively patient was reviewed, he was clinically well with no sign of intestinal obstruction or infection. Per examination abdomen was unremarkable and presence of a large right inguino-scrotal bulge that was only partially reducible.

During the day of surgery (14/6/2017), an incision was made over the right inguinal; an indirect inguinal hernia was identified. The hernia sac opened and surprisingly the terminal ileum, caecum and appendix were found within. No inflammation noted and all organs reduced back into abdominal cavity followed by a Lichtenstein’s hernia repair.

Patient was discharged two days post operatively being well and no immediate complications post operatively.

Discussion

Amyand’s hernia is defined as the presence of an appendix in the inguinal hernia. This definition is general and does not differentiate on whether its’ only the appendix or appendix and caecum (sliding hernia) that is present in the hernia sac.

Amyand’s hernia was first described by Claudius Amyand, a French surgeon, who served as sergeant surgeon to King George II of England on December 6th, 1735. His patient an 11 year old boy presented with an inflamed perforated appendix in his inguinal hernia sac with fistula formation between the scrotum and the thigh. Amyand later went on to perform the world’s first appendectomy on the same patient. The patient recovered and was discharged however the hernia later recurred [1].

Amyand’s hernia is rare in presentation with an incidence of about 0.6% of all inguinal hernias [2,3]. It is known to be more common on the right side likely because of the normal anatomical position of the appendix and also due to the fact that right sided inguinal hernias are more common. The left sided Amyand’s hernia is even rarer and usually associated with mobile caecum, gut malrotation or situs inversus [4]. Among our cases presented the left Amyand’s hernia is likely attributed to mobile caecum.

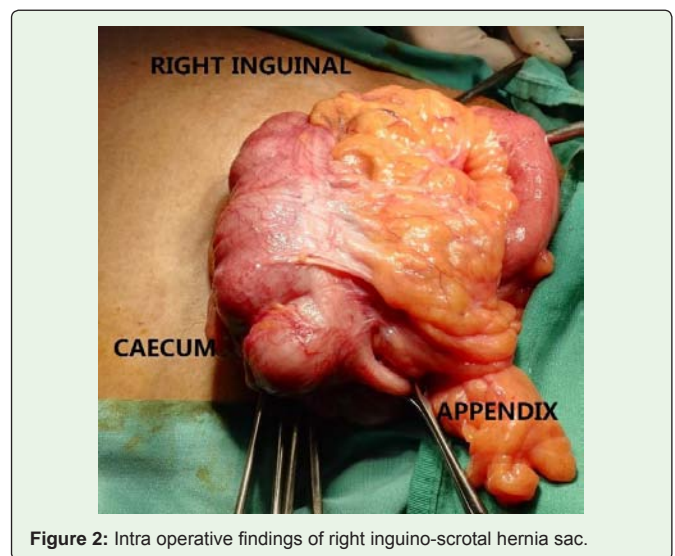


Figure 2: Intra operative findings of right inguino-scrotal hernia sac.

Table 1: Classification of Amyand’s hernia after losanoff and basson.

Classification	Description	Surgical management
Type 1	Normal appendix within an inguinal hernia.	Hernia reduction, mesh repair. Appendectomy in young patients.
Type 2	Acute appendicitis within an inguinal hernia. No abdominal sepsis.	Appendectomy, hernia repair with no mesh.
Type 3	Acute appendicitis within in inguinal hernia with abdominal wall/peritoneal sepsis.	Laparotomy, appendectomy, primary repair of hernia, no mesh.
Type 4	Acute appendicitis within inguinal hernia, relater/unrelated other abdominal pathology.	Manage as type 2/3. Investigate or treat second pathology as appropriate.

Preoperative diagnosis of Amyand’s hernia pose a challenging task as there are no typical symptoms during presentation. Amyand’s hernia may mimic strangulated hernia, acute scrotum, tumors or just an incidental finding. Symptoms vary from a mere bulge that is partially reducible with no symptoms of a complicated hernia as seen in our third case compared to an strangulated hernia as seen in our first case. Symptoms may also vary depending on the extent to inflammation of the appendix or abscess formation within the hernia sac.

While ultrasound assessment may demonstrate an inflammatory mass within a hernia sac, it is not sensitive in detecting an Amyand’s hernia. A contrast enhanced computed tomography or MRI are more helpful in diagnosing Amyand’s hernia however they are not routinely done [5,6]. Amyand’s hernia has also been previously reported as incidental findings in barium enema study [7].

Appendectomy in an Amyand’s remaining a debate up till today and mostly based on the surgeon’s discretion. There is no much argument in an inflamed appendix where all surgeons agree that post appendectomy the hernia should be repaired with either Bassini or Shouldice technique without using a mesh [8,9]. This is due to the high risk of the mesh being infected and against the basic principles of surgery. If the hernia were to recur later on it could be repaired laparoscopically. Priego et al reported among three cases where appendectomy was performed due to findings of acute appendicitis followed by mesh repair one patient developed wound infection [10].

The debate circles mainly on whether appendectomy should be done in cases where it is not inflamed. It was argued by some parties that prophylactic appendectomy presents a risk of infection in an otherwise clean surgery [2,8,9]. There are some authors who recommend hernia reduction along with appendix and laparoscopic appendectomy later if the patient develop acute appendicitis in the future [2,11]. While the idea is acceptable, it must be taken into consideration other clinical issues such as the risk of anaesthesia in the elderly or young, co-morbid etc. [9] In our second case of a left Amyand’s hernia, appendectomy was done due to concern of the potential diagnostical dilemma to diagnose an acute appendicitis in view of the atypical location of the appendix which may lead to delay in providing the appropriate treatment as addressed by Johari et al in 2009 [12].

Up till now there are no evidence based studies done on whether appendectomy should be done in an Amyand’s hernia with normal appendix. In 2007 Losanoff and Basson proposed a classification scheme (Table 1) to determine management which divides Amyand’s hernia into 4 types. They recommend for appendectomy in paediatric

and adolescent patients who have significantly higher risk to develop acute appendicitis compared to middle-aged or elderly individuals [9]. This is due to the fact that manipulations of the appendix and reduction into the abdominal cavity may lead to inflammation of the appendix. Furthermore for those patients, they usually undergo herniotomy without mesh thus taking out the issue of infected mesh in this debate.

Ofli et al in his study reported no surgical site infection or hernia recurrence in 11 patients who underwent appendectomy during herniorrhaphy and in conclusion he advocated “incidental: appendectomies [13].

In our case series 2 of our patients who underwent appendectomy went on with an uneventful recovery. At 30days post operatively all patients were asymptomatic and already returned to their daily activities.

Conclusion

Amyand’s hernia is a rare condition and commonly only diagnosed intraoperatively during a herniotomy/hernioplasty. The diagnosis of an Amyand’s hernia should be kept in consideration while managing a giant inguino-scrotal hernia.

To date, there is no critical appraisal done for the treatment classification of Losanoff and Basson. Although most authors advocate appendectomy in inflamed appendicitis there is still debate on whether appendectomy should be done in an Amyand’s hernia with normal appendix. We suggest that great consideration to be taken on all clinical aspects and the decision for prophylactic appendectomy should be individualized.

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