



Case Report

Case Report: Amyand's Hernia with Acute Appendicitis in an Adult Female

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Introduction

Amyand's hernia is a term used to describe an inguinal hernia with vermiform appendix in the sac. Here we are reporting a female patient who was diagnosed with acute appendicitis in an inguinal hernia.

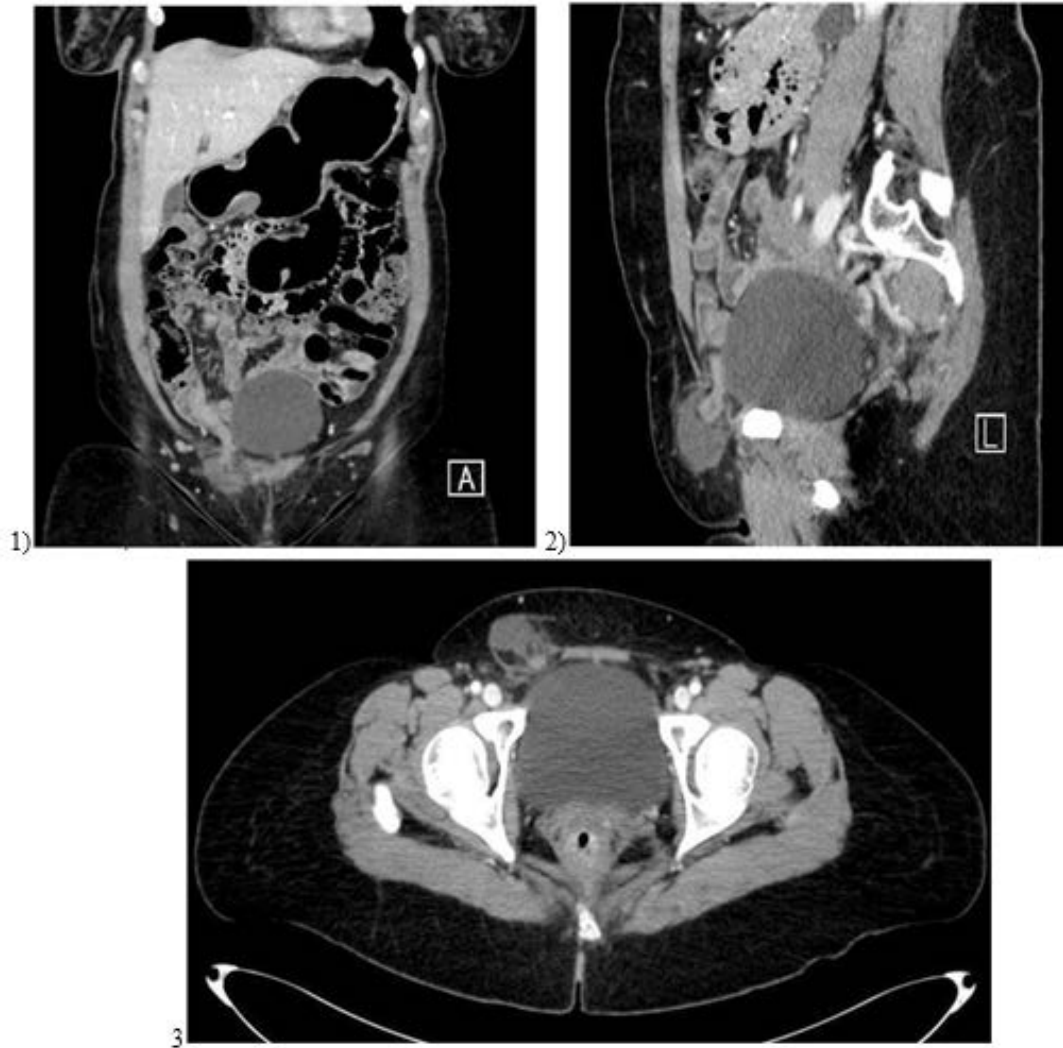
Case Report

A 55 years old Saudi non-smoker house-wife presented to our emergency department complaining of right groin painful swelling for two days following exercise. The swelling was not increasing in size and did not increase with cough. It was associated with nausea and decreased appetite but no change in bowel habit. There was no history of fever and no urinary symptoms. It was the first attack of its kind. She was P4 + 0 and known case of hypertension on medication with good control with no previous surgeries. On examination, She was conscious and well oriented to time, place and person. She was sitting comfortably in bed, not in pain or distress. Not jaundiced or anemic clinically. Patients BMI was 29. Vital signs were normal and she was afebrile. Abdominal examination showed soft, lax abdomen with a tender 4x4 cm swelling in the right groin that is not pulsatile and with no breue or thrill. It was irreducible with no positive cough impulse, no hotness and no redness of overlying skin.

There was tenderness on superficial palpation and rebound tenderness. No bowel sound audible over the swelling. Systemic review was unremarkable. Her Complete blood count, Renal function test, Serum electrolytes, liver function profile, Coagulation profile were all within normal limits (Table 1). Abdomen and Pelvis computerized tomography with contrast was requested and showed a small (3 x 3.5 x 5 cm) right inguinal hernia with a narrow neck, measuring 1.1 cm. Which contained fluid and the distal third of the appendix which was thickened (1.2 cm in diameter); remainder of the appendix was intraperitoneal and thickened measuring 0.9 cm. There was no fat stranding around the intra-abdominal part of the appendix. The remainder of the bowel loops and solid organs were unremarkable. There was no enlarged lymph nodes and no ascitis (Figures 1-3).

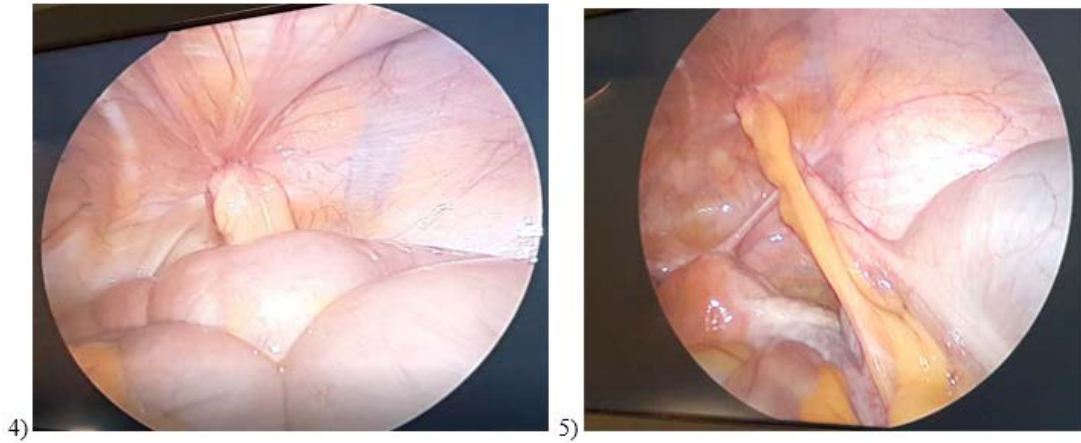
WBC	10.3 10 ⁹ /l
Neutrophils	6.2 10 ⁹ /l
HB	11.1 g/dl
PIT	260 10 ⁹ /l
Urea	4.3 mmol/L
Creatinine	57 umol/L
Sodium	140 mmol/L
Potassium	3.5 mmol/L
Albumin	38 g/L
CRP	5 mg/L
ESR	51 mm/hr

Table 1: Laboratory Blood investigations.

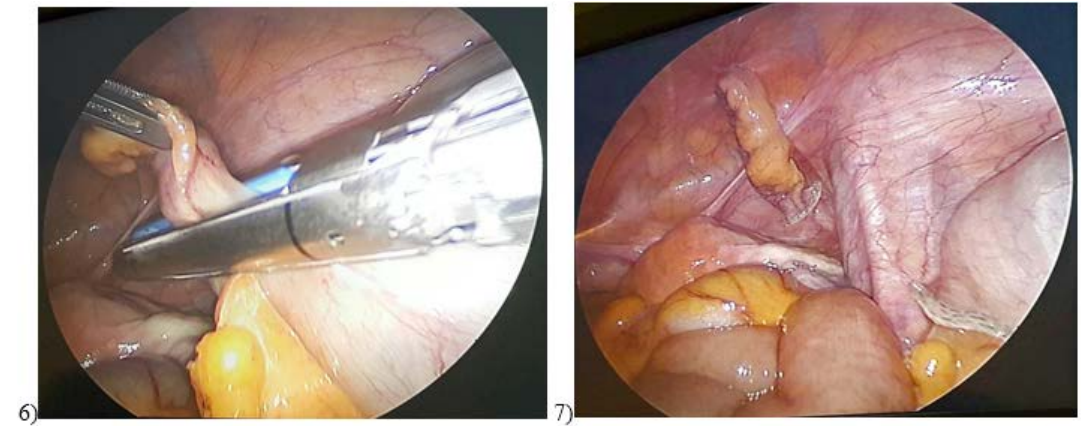


Figures 1-3: Radiological images are from the mentioned patient CT study done in Prince Sultan Military Medical City in Riyadh, Saudi Arabia.

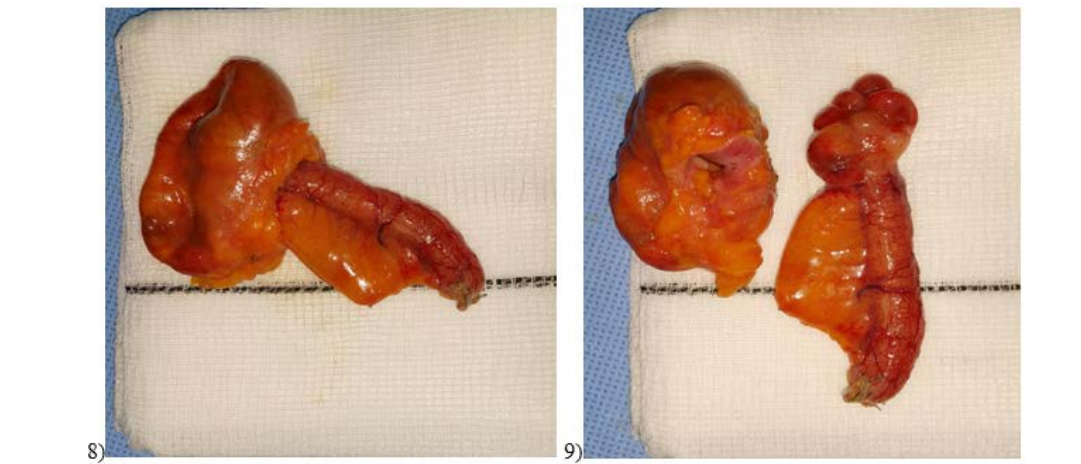
The patient was taken to operating room a case of Amyand's hernia with uncomplicated acute appendicitis. Under general anesthesia, we started our procedure with Laparoscopic exploration and findings were of right indirect inguinal hernia with the distal part of the appendix trapped in the hernial sac and could not be reduced. Intra-abdominal appendix was inflamed as well, with a healthy base and unremarkable caecum and bowel loops. With minimal clear fluid in the pelvis (Figures 4 and 5). Laparoscopic appendectomy using endo-GIA staple at the base of the appendix was done and the inflamed appendix was left in the hernia sac (Figures 6 and 7). Then we proceeded with open right inguinal Incision over the irreducible hernia and the hernia sac which was thick with fluid and adhesions surrounding the tip of the appendix. It was dissected as one piece and removed without spillage through the inguinal incision (Figures 8 and 9). A primary tissue repair of the inguinal hernia was performed in the form of modified shouldice repair and the wound was closed with interrupted mattress sutures.



Figures 4 and 5: Intra-abdominal appendix was inflamed as well, with a healthy base and unremarkable caecum and bowel loops. With minimal clear fluid in the pelvis.



Figures 6 and 7: Laparoscopic appendectomy using endo-GIA staple at the base of the appendix was done and the inflamed appendix was left in the hernia sac.



Figures 8 and 9: It was dissected as one piece and removed without spillage through the inguinal incision.

There was no immediate complications and minimal blood loss. Day one post operative, patient was doing well . Complaining only of mild pain at incision site. She was already taking orally soft diet and mobilizing well with help. She was discharged home with instructions and out patient clinic follow up. She received a total of three doses of metronidazol 500 mg IV and cefuroxime 750 mg IV as an inpatient and no antibiotics on discharge. Histopathology reported acute appendicitis with serositis and fat necrosis and an unremarkable hernia sac. Aspirated fluid from hernia sac showed no growth after 5 days. First clinic assessment day 5 post-operative, patient was doing well. She has no major complain, no fever and was taking normal diet. Passing flatus and stool normally. Upon examination, her abdomen was soft and all wounds were clean and dry. Patient was seen again three months later and was in good condition with no major complain and no evidence of hernia recurrence.

Discussion

Acute appendicitis is one of the most common surgical pathologies requiring urgent surgical intervention. The lifetime risk of developing acute appendicitis in females is 6.7 % [1]. The incidence of inguinal hernia in females is 1.9 % [2]. The incidence of non-inflamed appendix in an inguinal hernia is 1% and the incidence of appendicitis within an inguinal hernia is 0.07 - 0.13% [3,4]. Amyand hernia was first suggested by Creese in 1953, in recognition of Claudius Amyand who performed the first successful appendectomy in 1735 in 11 years old boy who presented with acute appendicitis in a direct inguinal hernia [5]. Losanoff and Basson created a classification for Amyand's hernia with suggested treatment of each degree (Table 2) [6].

Classification	Description	Suggested Surgical approach
Type I	Normal appendix incidentally discovered in the inguinal hernia sac	Hernia reduction, appendectomy, Mesh hernioplasty
Type II	Clinical signs & symptoms of acute appendicitis within an inguinal hernia but no abdominal sepsis	Appendicectomy through hernia primary Hernia repair
Type III	Clinical signs & symptoms of acute appendicitis within an inguinal hernia, with peritoneal sepsis	Laparotomy, appendicectomy, primary repair of hernia, no mesh
Type IV	Acute appendicitis within an inguinal hernia, with another abdominal pathology	Manage as types 1 to 3 hernia, investigate or treat second pathology as appropriate

Table 2: Losanoff and Basson classification for Amyand's Henria.

Reaching the diagnosis of Amyand's hernia is clinically difficult especially in female patients. It is usually found incidentally during routine reparaire of an inguinal hernia or in radiological imaging requested for a patient with abdominal pain to assess abdominal pathology as our case. The treatment should be tailored to each patient according to presentation with the primary aim to control the infection source and provide the best hernia repair that can be offered. In our case, the decision was to start with laparoscopic exploration and after dissecting the appendix base laparoscopically, we found that the distal third of the appendix was trapped in the hernia sac and if was impossible to deliver it safely without risking spillage of the fluid inside the peritoneal cavity so the decision was to proceed with open inguinal incision and deliver it with the sac. Contamination was kept minimal and the hernia was repaired with modified Shouldice repair. We decided to avoid mesh repair due to the presence of turbid fluid making infection rate high with the use of prosthetic repair. There was good results and no signs of recurrence during the four years follow up in the out patient clinic with proper post operative instructions to avoid risk factors such as chronic cough,

constipation and heavy lifting.

Conclusion

Having high index of suspension is crucial with females complaining of lower abdominal painful swelling as the diagnosis of Amyand's hernia can be easily missed. We recommend to strategically plan the surgical intervention based on the patients clinical examination and radiological findings aiming to end up with appendectomy and hernia repair at the same setting if possible.

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