

## Cash Report

# Amyand's hernia: a rare case presentation

Hemant Mhatre, Vijay Kanake, Vipul Nandu\*

Department of Surgery, Shri. V. N. Govt. Medical College, Yavatmal, Maharashtra, India

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**\*Correspondence:**

Dr. Vipul Nandu

E-mail: [dr.vipulnandu@gmail.com](mailto:dr.vipulnandu@gmail.com)

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### ABSTRACT

Inguinal hernia, defined as the protrusion of an organ or fascia through the wall of the containing cavity, is one of the most frequent surgical procedures that a surgeon faces. In a very low frequency, one can find the vermiform appendix inside the hernia sac; whether it is inflamed or not; this condition is denominated as "Amyand Hernia". Amyand Hernia is a rare disease seen in approximately 1% of all hernias, complications of it, like acute appendicitis, or perforated appendicitis are even rarer, about 0.1%. Its diagnosis is very difficult in the pre-operative period; it is usually an incidental finding. Here we report a rare case of right inguinal hernia in a 40 years old male patient, who was incidentally found to have an inflamed appendix in the hernia sac that underwent appendicectomy with hernioplasty for same.

**Keywords:** Inguinal hernia, Amyand, Appendix, Appendicitis, Appendicectomy

### INTRODUCTION

Inguinal hernia, is one of the most frequent surgical procedures that a surgeon faces.<sup>1</sup> Yet, in spite of its great incidence, hernias often pose a surgical dilemma, even for the skilled surgeon.<sup>2</sup>

Appendix inside the hernia sac is denominated as "Amyand Hernia" whether it is inflamed or not.<sup>3</sup> Amyand hernia is most frequently reported in men, and almost exclusively on the right side.<sup>4</sup>

Pre-operative clinical diagnosis is practically impossible but has been reported via trans-abdominal ultrasound and Computed tomography.<sup>4,5</sup>

Management involves a laborious surgical technique, and its definitive technique will depend on surgeons experience and clinical scenario with SOS appendicectomy with herniorraphy or hernioplasty.

### CASE REPORT

A 40 yrs. old gentlemen, presented with complaints of swelling in right inguinal region since 6 months which has been progressively increasing in size over the period of past 6 months. The swelling increased in size on standing, walking and lifting heavy weight and reduced in size on rest or sleeping. It has been associated with chronic dull aching pain which aggravated on standing or walking and relieved on rest. Since last 2 days there was increased pain over the swelling and discomfort while walking, with swelling not reducing completely even after rest. It was associated with nausea and vomiting since last 1 day. There was no complaint associated with left inguinal region.

On clinical examination, vital parameters were within normal limits except for mild tachycardia. Local examination revealed a swelling of size 8 x 4 cms over the right inguinal region. There was raised local temperature over the swelling and increased tenderness

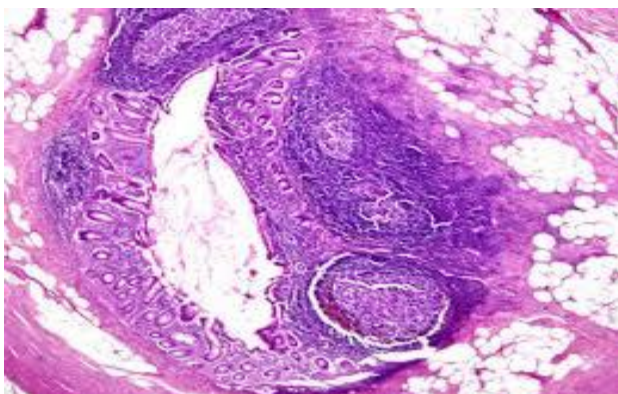
over the right inguinal region. Cough impulse was present. The swelling was compressible and partially reducible. Rest of the hernial orifices were within normal limits. No inguinal lymphadenopathy noted.

On evaluation, he had leucocytosis with trans-abdominal ultrasonography suggestive of right inguinal hernia with minimal free fluid in hernial sac with omentum as the content in the hernial sac.



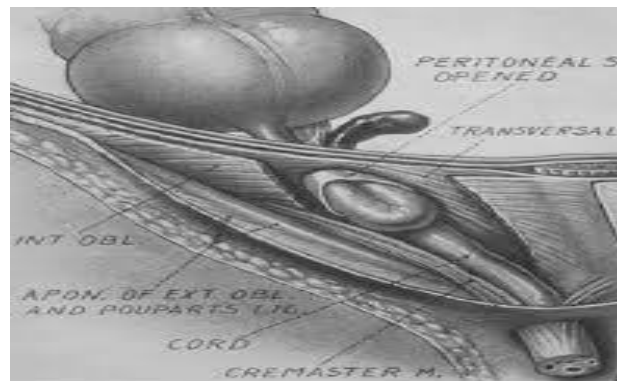
**Figure 1: Intra-op photo showing appendix as content of hernial sac in right inguinal hernia.**

With proper pre-operative workup and fitness, patient was posted for elective surgery. Oblique incision taken just above the inguinal canal. Swelling and induration protruded outside the deep ring towards the inguinal canal and scrotum. Hernial sac identified and separated from the cord structures. Sac opened. An inflamed appendix with its tip pointing found outside the deep inguinal ring (Figure 1). The base of appendix found to be healthy and terminal ileum and cecum mobilized through same incision, appendix double ligated, base crushed and appendicectomy done. Remaining structures in the hernial sac reduced. Sac transfixated and excess sac excised. Mesh hernioplasty done. Haemostasis confirmed and incision closed in layers. Patient tolerated the procedure well.



**Figure 2: Histopathology of the specimen showing acute appendicitis.**

The patient kept nil by mouth for about 48 hrs and then gradually shifted on oral diet after that. He recovered well and was discharged on 4th post-operative day. He followed up on 10th post-operative day for suture removal and then periodically for 3 months during which he was asymptomatic.



**Figure 3: Diagrammatic picture of Amyand's hernia.**

## DISCUSSION

De Garengot first reported the finding of appendix in femoral hernia sac in 1731. The first recorded appendicectomy was performed by Claudius Amyand in 1736 through a right inguinal hernial sac.<sup>6,7</sup>

Inguinal hernia, defined as the protrusion of an organ or fascia through the wall of the containing cavity, is one of the most frequent surgical procedures that a surgeon faces.<sup>1</sup> Yet, in spite of its great incidence, hernias often pose a surgical dilemma, even for the skilled surgeon.<sup>2</sup> In a very low frequency one can find the caecal appendix inside the hernia sac; whether it is inflamed or not; this condition is denominated as “Amyand Hernia” (Figure 3).<sup>3</sup>

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 within femoral hernia sac is referred as De Garengot hernia. Other rare contents like appendices epiploicae, ovary, fallopian tubes, and extratesticular intrascrotal lipoma have also been reported.<sup>[8]</sup>

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%.<sup>9</sup> The triggering factor can vary from, obstruction (attributed to the external compression of the appendix at the neck of the hernia) to direct trauma over the hernia, both causing a reduced vascular flow, ischemia and infection.<sup>3,4</sup> Amyand hernia is most frequently reported in men and almost exclusively on the right side.<sup>4</sup> There is, however, an exception where the appendix is on the left side: situs-inversus, intestinal malrotation, a very loose cecum or a very large appendix.<sup>4,10</sup>

Presence of asymptomatic appendix in most cases is an incidental finding, often noticed intra-operatively. The majority of the cases of Amyand's hernia present with the

features of an obstructed or strangulated inguinal hernia or with or without features of appendicitis.<sup>7,9,11,12</sup>

**Table 1: Losanoff and Basson classification of Amyand Hernia.<sup>14</sup>**

Classification	Description	Management
Type 1	Normal appendix in an inguinal hernia	Hernia reduction, mesh placement
Type 2	Acute appendicitis in an inguinal hernia with no abdominal sepsis	Appendectomy, primary no prosthetics hernia repair
Type 3	Acute appendicitis in an inguinal hernia with abdominal and abdominal wall sepsis	Laparotomy, appendectomy, and primary no prosthetic
Type 4	Acute appendicitis in an inguinal hernia with abdominal concomitant pathology	Same as type 3 plus management of concomitant disease

Pre-operative clinical diagnosis is practically impossible but has been reported via trans-abdominal ultrasound or computed tomography.<sup>3-5</sup> Acute appendicitis in hernia sac is rarely diagnosed preoperatively and often misdiagnosed as either testicular torsion or epididymo-orchitis. Computed tomography scanning of the abdomen could be helpful for diagnosis, but this is not a routine practice after the clinical suspicion of a complicated inguinal hernia.<sup>13</sup> USG reveals a blind-ended non-compressible tubular structure and increased vascularity. CT abdomen will reveal a tubular blind-ended structure originated from the cecum wall is observed and extends to the hernia sac (Figure 4).<sup>4,13</sup>

The presence or absence of inflammation of the appendix is a very important determinant of appropriate treatment. In 2007, Losanoff and Basson proposed a classification when facing this rare condition (Table 1).



**Figure 4: CT image showing Amyand's hernia.**

In Amyand type 1 hernia, since there is incidental finding of a normal appendix in hernial sac with no associated inflammation of organ, hence, no resection of caecal appendix is recommended and reduction of sac contents with hernioplasty with prosthetic polypropylene mesh is done (Parviz Amid class II).<sup>4,5,14-16</sup> International literature also recommends reducing the hernia content and

perform no tension hernia repair.<sup>4,14-16</sup> If appendectomy is performed, a clean surgery is combined with a clean contaminated surgery, raising the infection rate and possible infection of prosthetic material.<sup>4</sup> This statement changes in the pediatric population, and in a left side Amyand hernia, in which appendectomy does not complicate inguinal hernia repair.<sup>5,10,14,15</sup>

In case of left-sided Amyand's hernia, appendectomy is performed even if appendix is normal to prevent any atypical clinical presentation of appendicitis in the future because, in these cases, the caecum is mobile or the patient has intestinal malrotation.<sup>17</sup> In the cases where an inflamed, suppurative or perforated appendicitis was encountered (type 2, 3 & 4 of Amyand hernia), no prosthetics material should be used because of the increased risk of surgical site infection as well as possible fistulae formation from the appendicular stump.

In these cases, in addition to appendectomy, a Should ice technique (hernioraphy) should be consider because of its lower recurrence rate, this will depend on the surgeon's decision, experience and domain over tension inguinal hernia repair techniques. With the new prosthetic materials such as biological mesh, current surgical approach in Amyand type 2 hernias suggests its use to prevent recurrence.

## CONCLUSION

From our case it is highlighted that lymphomas should be always kept in mind as a differential diagnosis before opting for surgery. CT guided biopsy with histopathological examination of focal masses near the pancreas and spleen is therefore mandatory to confirm the diagnosis than imaging techniques. The application of immunohistochemistry plays a major role in distinguishing the differential diagnosis and it's role should be stressed on to the physicians and surgeons to reasonably make a decision on treatment strategies.

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