

## Amyand Hernia: Case Report

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**Abstract:** Amyand hernia is a rare event that consists in the vermiform appendix being located within the hernial sac, with or without inflammation. This study aims to report the case and handling of an elderly female patient with abdominal pain and right inguinal bulge with ultrasound diagnosis of incarcerated inguinal hernia, being the final diagnosis Amyand hernia perceived only during the surgery.

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

### Introduction

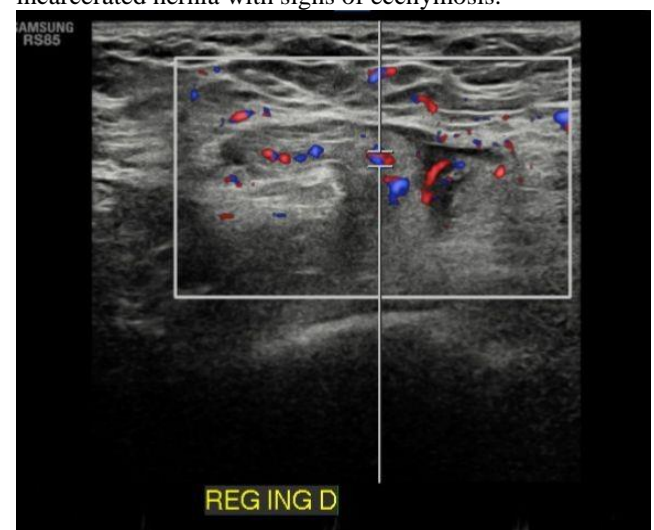
Amyand hernia is defined with the presence of the vermiform appendix within the sac of an inguinal hernia. The appendix can be normal, swollen, ruptured and gangrenous, but the first situation is more frequent (5). The clinical manifestation is diverse but, in most cases, it appears as a case of incarcerated inguinal hernia, the final diagnosis being predominantly intra operative(4). This study will report the case of a 70-year-old female patient, with previous diagnosis of chronic right inguinal hernia, that sought assistance due a case of pain and bulge in the right inguinal region 7 hours prior admission, being sudden and without other related symptoms.

### Case report

Female 70-year-old patient, previously hypertense, diabetic and with ultrasound diagnosis of right inguinal hernia for the past year and waiting for correction with elective surgery. Denied previous background incarceration and recurred to the service of a tertiary hospital of general surgery in the state of São Paulo, Brazil, with claims of worsening of right inguinal bulging associated to intense local pain. Reported that after anesthesia presented a partial reduction in the pain and in the hernial content. In physical exam of the inguinal area could be noted a non-reducible umbilical hernia without phlogistic signs and flaccid abdomen. An ultrasound was requested of the inguinal region in which was

verified an incarcerated hernia (Figure 1) with signs of ecchymosis being advised surgical approach through the same inguinotomy. In intra-operative was perceived the presence of vermiform appendix in hernial sac (Figures 2 and 3) with signs of inflammation without rupture or local complications. Performed the appendectomy by the same incision without the need of further enlargement. Patient evolved without interferences with hospital discharge 2 days later after surgical intervention.

Figure 1. Ultrasound of inguinal region highlighting incarcerated hernia with signs of ecchymosis.



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Figure 2. Vermiform appendix in hernial sac with signs of inflammation, without rupture or local complications

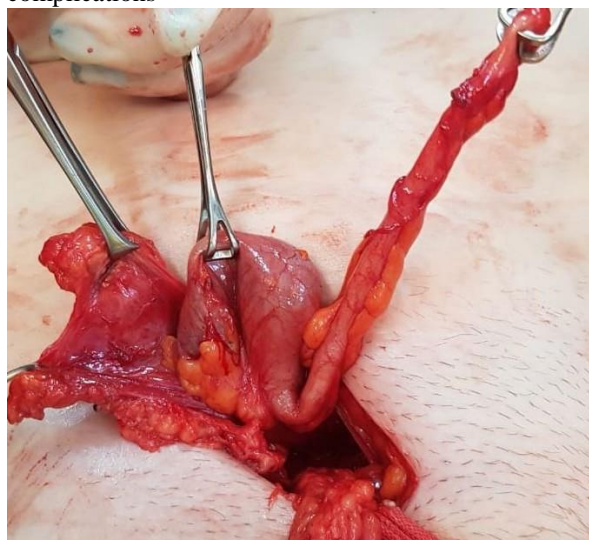


Figure 3. Vermiform appendix in hernial sac with signs of inflammation, without rupture or local complications



**Discussion**

When the appendix is incarcerated in an inguinal hernia it is called Amyand hernia in homage to Claudius Amyand, which in 1735, performed an appendectomy to the treatment of a 11-year-old boy with non-reducible right inguinal hernia with the content of the appendix. The incidence is 0,19%-

1,7% of the reported hernia cases(7). The incidence of appendicitis inside an inguinal hernia is even more rare, with an estimated rate of 0,07-0,13%.(7) It is three times more common in kids, due to patency of the vaginal process. It is more common in men, and in women it is observed postmenopause. It is more common on the right side. Very few cases of Amyand hernia on the left side were documented in the literature, associated with situs inversus or mobile cecum. Different theories for the occurrence of Amyand hernia were proposed. Due to a long appendix pointing towards the groin or loose peritoneal reflections and redundant cecum, the appendix may reach the hernia and become stuck in the sac.(6) It is believed that appendicitis in Amyand hernia can be caused by extraluminal compression causing edema of the appendix with narrowing of the ring together with the contraction of abdominal wall muscles causing incarceration and strangulation.(2) The classical intraluminal obstruction of the appendix does not seem to have an important role. However, diffuse peritonitis is considered to be less likely in case of complicated appendicitis due to the location of the contents inside the sac. Its clinical presentation is variable, depending on the moment of the diagnosis. In cases of non-swollen appendix is compatible with reducible inguinal hernia; in cases which the swollen appendix can simulate incarcerated or strangulated inguinal hernia. The preoperative diagnosis is hard, being usually done during surgery.

Testicular torsion, funiculitis, Richter hernia and strangulated hernia, among others, can be differential diagnosis.(1) Complications are reported in the literature, such as: rupture of the appendix with perpendicular or intra-abdominal abscess, necrotizing fasciitis of anterior abdominal wall and testicular abscess.(8) The treatment is surgical and consists in appendectomy or no, followed by repair of the hernia with or without mesh. The ratings of Losanoff and Basson (Chart 1) and Fernando and Leelaratre (Chart 2) can be used as orientation for the proper treatment.(3)

Chart 1: Ratings, findings and treatment of Amyand hernia proposed by Lossanoff and Basson

| Ratings | Findings  | Treatment   |
|---------|---|---|
| 1       | Normal appendix   | Appendectomy or reduction (based on age) and repair of the hernia with mesh |
| 2       | Acute appendicitis  | Appendectomy and repair of hernia without prosthesis                        |
| 3       | Acute appendicitis and peritonitis                                      | Laparotomy, appendectomy and hernia repair without prosthesis               |
| 4       | Acute appendicitis with another abdominal pathology (abscess, tumor...) | Appendectomy, diagnosis and proper treatment of another abdominal pathology |

Chart 2: Ratings of Amyand hernia, according to Fernando and Leelaratre and treatment guidance

|        |                                 |  |
|--------|---------------------------------|--|
| Type A | Normal appendix                 | Repair with prosthesis, without approach of the appendix   |
| Type B | Acute appendicitis              | Appendectomy; repair of hernia without prosthesis  |
| Type C | Acute appendicitis with rupture | Appendectomy; repair of hernia without prosthesis (by different incisions if abscess or peritonitis) |

**Conclusion**

It can be concluded that Amyand hernia, a rare anterior abdominal wall hernia, presents variable clinical characteristics and controversial conduct. The conduct was to perform the appendectomy, because the vermiform appendix presented inflammation signs, and do the repair of the hernia without prosthesis. Is recommended in the literature that towards an individual with strangulated or incarcerated right inguinal hernia, the surgeon must consider Amyand hernia as a differential diagnosis.

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