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Atypical Presentation of Acute Appendicitis: Amyand's Hernia in a COVID-19 Patient Case Report

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Abstract **Case Report**

An Amyand's hernia is described as the phenomenon of the vermiform appendix entrapped inside the sac of an inguinal hernia and is regularly overlooked as an obstructive hernia. In this case report, we describe a 73-year-old male patient who presented to the emergency room with a presenting complaint of painless bilateral masses in the inguinoscrotal region. During the admission process, the patient's rapid COVID-19 test also tested positive for IgM SARS-CoV-2. A bilateral hernioplasty with the Lichtenstein technique was decided as the appropriate surgical intervention. During the procedure, the right inguinal hernia (Nyhus IIIB) with a hernial sac containing the right colon with the cecal appendix in the suppurative phase (Amyand's hernia) was observed, alongside a left inguinal hernia (NyHus IIIA). This case report depicts a unique presentation of Amyands Hernia and a discussion section aiding healthcare professionals in the diagnosis and management of this rare occurrence and patient education on post-surgical management.

Keywords: Amyand's hernia, Case report, Inguinoscrotal, Hernioplasty, COVID-19, SARS-Cov-2, Surgery, and Appendix.

INTRODUCTION

Amyand's hernia is defined as the presence of the vermiform appendix caught inside the sac of an inguinal hernia and is frequently overlooked as an obstructive hernia [1]. This hernia was described for the first time by Claudius Amyand in 1735 and is deemed highly rare and uncommon, occurring in less than 1% of all inguinal hernias [2, 3]. The phenomenon of an Amyand's hernia commonly presents more during childhood and is more prevalent in males due to the higher incidence of right-sided inguinal hernia [4]. Since the onset of the COVID-19 pandemic, few cases of acute appendicitis have been reported in patients with bilateral hernias. The findings were incidental during surgical intervention with bilateral hernioplasty with the Lichtenstein technique and additional appendectomy with drainage placement for the Amyand hernia. The main complications arising from an Amyands hernia are inflammation, infection, and potential perforation that may be calamitous if there are delays in intervention.

CASE PRESENTATION

A 73-year-old male patient was admitted to the emergency room (ER) with a presentation of painless bilateral masses in the inguinoscrotal region. The mass was more predominant toward the right side, reducible and increasing in size. Approximately 24 hours prior, this mass was accompanied by worsening pain, redness, warmth, tenderness, and impossibility of reduction in the right hemiscrotum. The patient has a past medical history of type II diabetes mellitus (DM), ischemic heart disease with low ejection fraction, and hypercholesterolemia. The patient does not have any relevant surgical history. The patient's vital signs were within normal limits with no signs of distress. Physical examination revealed a globose abdomen at the expense of an adipose panniculus, soft, depressible, slightly painful on deep palpation in the right iliac fossa, without signs of peritonism. The presence of a tender, non-reducible, bilateral inguinoscrotal protrusion with apparent atrophic changes in the skin at the right scrotal level drew our attention.

Fig-1: Anterior view of bilateral masses in the inguinoscrotal region

Fig-2: Lateral view of bilateral masses in the inguinoscrotal region

The inguinal scrotal ultrasound showed:

Right inguinoscrotal region: continuity defect at rest measuring 28 mm in length, and with Valsalva maneuvers the defect increases to 30 mm, with content that protrudes into the scrotal sac, which contains intestinal loops without peristalsis with decreased vascularity, omentum, free fluid. The content was non-reducible. Left inguinoscrotal region: continuity defect at rest measures 17 mm in length and with Valsalva maneuvers the defect increases to 21 mm, with content that protrudes into the scrotal sac, which contains intestinal loops without peristalsis with decreased vascularity, omentum. The content was non-reducible. Blood tests results showed, a white blood cell count of 8.36 x 109, lymphocytes of 1.03, and Hematocrit: 52.5% with hemoglobin: 17.50 g / dl.

As a requirement, every patient who enters surgery must undergo a rapid COVID 19 test, which was positive for IgM SARS-CoV-2. Due to the findings evidenced in complementary tests, the presumptive diagnosis of incarcerated bilateral inguinoscrotal hernia was established, for which an emergent surgical resolution was decided under safe surgery protocols in a patient with positive COVID-19. As a treatment, it was decided to perform a bilateral hernioplasty with the Lichtenstein technique. During surgery we disovered a right inguinal hernia (Nyhus IIIB) with a hernial sac containing the right colon with the cecal appendix in the suppurative phase (Amyand's hernia) and a left inguinal hernia. (Nyhus IIIA).

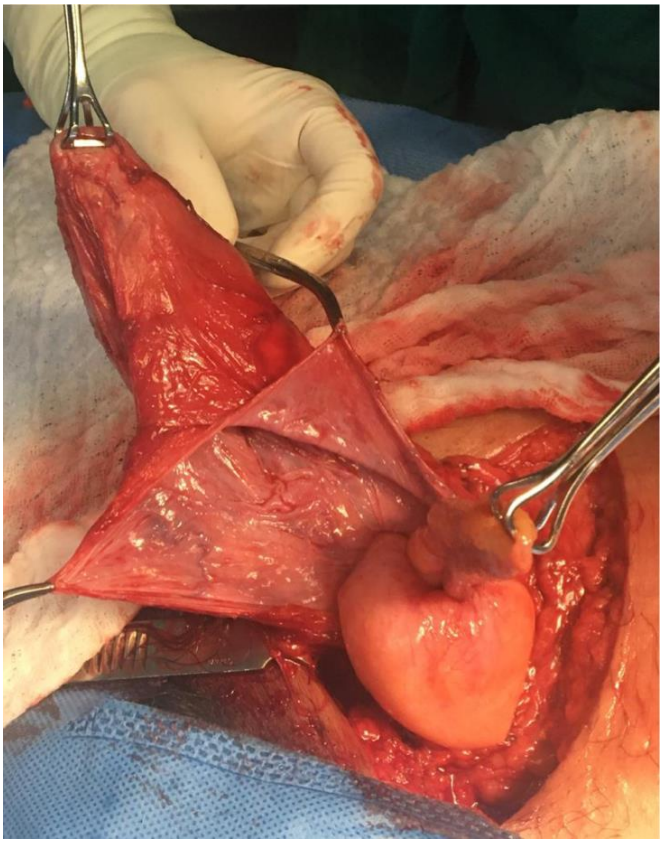

Fig. 3: Opening of the hernial sac

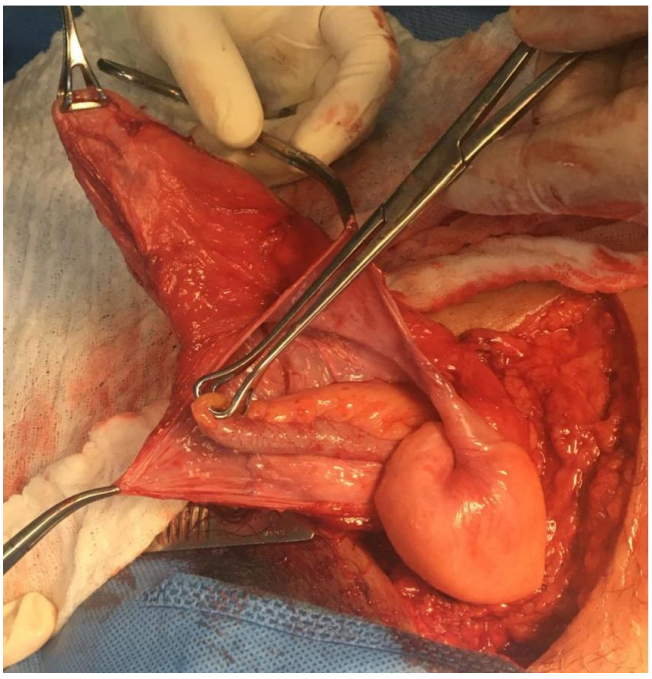

Fig. 4: Identification of the cecal appendix swelled within hernial sac

The procedure is concluded by performing a conventional bilateral hernioplasty with the Lichtenstein technique, an appendectomy, and the placement of an aspiration drain. In the postoperative period, the patient had good pain control and tolerated the diet. The drainage with scarce serohematic production was removed after 48 hours. The patient was discharged with outpatient management 72 hours after surgery.

DISCUSSION

Amyand's hernia is a rare condition characterized by the presence of the appendix within an inguinal hernia sac**.** [5]. The presence of an inflamed

appendix inside the inguinal hernia is far rare with an incidence of 0.07%-0.13% [5]. The ideal profile of the patient with an Amyand's hernia is a male subject, over 60 years old with a right-sided mass (either palpable or not), the patient in our case had all the characteristics of this profile. [5]. Amyand's hernias are considered rare and challenging as most are discovered during surgery [4, 6]. As in the majority of cases reviewed in the literature, the hernias that involve the cecal appendix in its interior, the trans-surgical finding develops when the size of the inguinal hernia is dissected, such as that observed in our patient [3, 5-7].

The current case was successfully resolved by means of a conventional technique of bilateral hernioplasty with the Lichtenstein technique plus an appendectomy and the placement of an aspiration drain. The diagnosis was suspected by the patient's outpatient clinic by ultrasound, although a CT scan is the ideal modality for imaging and is the gold standard. As in our patient, only ultrasound was available during this time. Finding the inflamed cecal appendix within the sac was crucial to identify the stage and determine the final treatment regarding the use of prosthetic mesh to repair the hernia. In pathology, appendicitis is advantageously found during the initial phase, which allows bilateral repair of hernias with the use of polypropylene mesh, taking into consideration that it is a clean-contaminated wound.

Youssef *et al.*, reported a study in 2018, describing hernias in normal cecal appendages or with mild inflammatory characteristics can be resolved by plasty of the hernial defect [7]. We agree with the literature reported and preceded with the placement and fixation of a mesh in our patient, taking into account the age of our patient [7]. However, another important point was to place a Jackson Pratt-type suction drain at the scrotal level to avoid the collection of fluid at this level given the wide dissection that was performed. The patient´s post-surgery went without complications and was discharged 72 hours later. According to Losanoff and Basson, the patient had a type 2 hernia due to the presence of acute appendicitis within the hernia without abdominal sepsis [8, 9]. Another recent article by Papaconstantinou *et al.*, reports that although there is a greater predisposition to herniorrhaphies when appendicitis is found, the hernia repair method must be individualized according to the inflammation extension within the inguinal canal to minimize complications [10]. Contrary to us, we had to consider that Amyand's hernias are incredibly rare in the literature; our patient was COVID positive and had bilateral inguinal hernias. During surgery, although there is much controversy in the use of mesh for hernia repair, our decision was unanimous to use it in this patient due to the histopathological findings of a wall with eroded mucosa with evidence of hyperplastic lymphoid follicles. Another drawback that we found was the decision to perform laparoscopic surgery vs open surgery, but in this patient, because we are admist a COVID 19 pandemic, we decided to follow the latest guidelines by performing an open surgery, although cases of laparoscopic repair have been reported [10, 11].

CONCLUSION

We present a case report of a rare disease with a very low incidence known as Amyand hernia in a 73-year-old COVID-19 positive patient. The Amyand hernia was discovered during surgical intervention of the incarcerated bilateral inguinoscrotal hernia. There was the dilemma of whether or not to place a prosthetic mesh, but do to the increased risk for contamination in our patient; mesh was decided to further reduce risk of infection and rejection. We decided to treat the Amyand hernia with bilateral hernioplasty using the Lichtenstein technique plus appendectomy with a favorable postoperative period. Intervention for such occurence should be prompt and immediate as further delay may result in complications and calamitous outcomes.

DECLARATIONS

Ethics Approval: Not applicable.

Conflict of Interest: The authors declare no competing interests.

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