




Amyand's Hernia Detected During Elective Inguinal Hernia Surgery

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ABSTRACT

Amyand's hernia (AH) is the presence of the appendix vermiformis (AV) in the hernia sac. This case report is aimed to present the approach to the case of AH, which was detected in an elective inguinal hernia repair. A 44-year-old male patient was admitted with complaints of bilateral bulging and pain in the groin. On physical examination, there was bulging in the bilateral inguinal region, which was more pronounced when the patient was standing. It was observed that bulging increased with the Valsalva manoeuvre. Laparoscopic hernia repair was planned for the patient under general anaesthesia. An indirect inguinal hernia sac extending to the scrotum on the right and containing the omentum was seen. When the omentum was pulled into the abdomen, appendix vermiformis was seen in the hernia sac (Amyand's hernia). There was no sign of inflammation in the appendix vermiformis. Small adhesions between the hernia sac and the appendix vermiformis were removed, and the appendix vermiformis was removed from the sac without resection. Subsequently, bilateral inguinal hernia repair was performed laparoscopically. The patient was taken to the service after the operation, and he was discharged the next day of the operation without complications.

Keywords: Hernia, Appendix, Inflammation.

INTRODUCTION

An abdominal wall hernia is the protrusion of all or a part of any organ from the fascia surrounding the abdominal wall.¹ The most common cause of abdominal wall hernia is muscle layer weakness, or a congenital/acquired defect in the abdominal wall. The condition that the hernia sac contents can be returned to the abdominal cavity is called a reduced hernia. The condition that it cannot be sent is called an incarcerated hernia.² The most common cause of incarcerated hernia is adhesions. If incarcerated hernias show blood supply disorder over time and gangrene develops, this situation is called strangulation and requires emergency surgical intervention.

The most common type of hernia is an inguinal hernia. The omentum or small intestine is usually seen in the

inguinal hernia sac. Its incidence is less than 1% among all inguinal hernias.³ Amyand's hernia (AH) is defined as the presence of the appendix vermiformis (AV) in the hernia sac with or without inflammation. In case of inflammation of the AV in the hernia sac, hernia repair is performed together with appendectomy. If there is no inflammation, only hernia repair is sufficient.

This case report is aimed to present the approach to the case of AH, which was detected in an elective inguinal hernia repair.

CASE REPORT

A 44-year-old male patient was admitted to Erzurum Regional Training and Research Hospital, Department of General Surgery, complaining of bilateral bulging and pain in the groin. The patient, who was an active smoker for ten

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years, had no known additional disease. He stated that he had bulging and pain in the groin for about five years and wanted surgery because his pain had increased in the last months.

On physical examination, there was bulging in the bilateral inguinal region, which was more pronounced when the patient was standing. It was observed that bulging increased with the Valsalva manoeuvre. His leukocyte count was $8.6 \times 10^3 / \text{mm}^3$, which was in normal ranges. Complete urinalysis and other biochemical parameters were routine. Elective surgery was planned for the patient diagnosed with a bilateral inguinal hernia without needing any radiological imaging.

Laparoscopic hernia repair was planned for the patient under general anaesthesia. An indirect inguinal hernia sac extending to the scrotum on the right and containing the omentum was seen. When the omentum was pulled into the abdomen, appendix vermiformis was seen in the hernia sac (Amyand's hernia). There was no sign of inflammation in the appendix vermiformis (Figure 1). Small adhesions between the hernia sac and the appendix vermiformis were removed, and the appendix vermiformis was removed from the sac without resection. Subsequently, bilateral inguinal hernia repair was performed laparoscopically. The patient was taken to the service after the operation, and he was discharged the next day of the operation without complications.

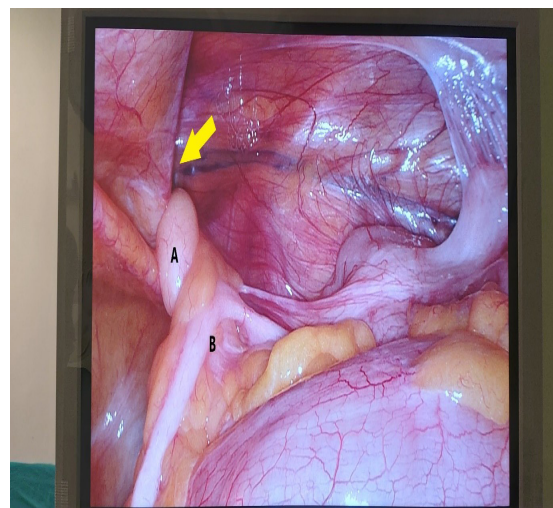


Figure 1. Laparoscopically detected Amyand's hernia (yellow arrow shows the inguinal orifice, A: appendix vermiformis, B: caecum).

DISCUSSION

Inguinal hernias are one of the most common surgical diseases. They are defined as the displacement of organs from the abdomen due to any weakness or defect in the abdominal wall. In most cases, the inguinal hernia sac contains the small intestine and omentum. The incidence of a normal AV within the hernia sac is 0.5-1%, and the incidence of an inflamed AV is 0.1%.⁴ The probability of developing appendicitis increases due to compression of the hernia sac at the neck level or impaired blood supply leading to infection.⁵

Claudius Amyand, the father of Amyand's hernia (AH), was the first surgeon to perform the appendectomy detected in the inguinal hernia sac in 1736.⁶ AH, which is more common in men, is usually right-sided.⁷ However, AH on the left side has been reported in situs inversus totalis, mobile caecum, and intestinal malrotation.⁸ In addition, Some cases of AH in women have been reported.⁹ Losanoff and Basson classify¹¹ AH into four types based on the presence of appendicular inflammation, associated

peritonitis, or any other abdominal pathology. According to this classification, AV is regular in type 1 hernias, acute appendicitis with limited inflammation inside the hernia sac is present in type 2 hernias, acute appendicitis causes peritonitis in type 3 hernias, and acute appendicitis and other abdominal pathologies are present in type 4 hernias.¹⁰ Surgical treatment depends on the type of AH.¹¹ In patients with acute appendicitis in the hernia sac, hernia repair without the use of prosthetic material is accepted by most surgeons after an appendectomy. In contrast, appendectomy is not recommended if a normal AV is detected in the hernia sac to avoid the risk of infection.⁶ Our case was a 44-year-old male patient with a bilateral inguinal hernia, consistent with the literature. It was evaluated as type 1 AH, and hernia repair with a prosthetic material was performed laparoscopically without appendectomy.

In the laboratory examination, there is no specific marker for AH. However, there is an increase in inflammatory parameters such as leukocyte and c-reactive protein in cases where acute appendicitis clinic is evident. On the other hand, imaging tools play an important role during diagnosis. A blind-ending intestinal loop within the inguinal canal with or without surrounding inflammation is the main finding on ultrasonography¹², while an inflamed or non-inflamed appendix vermiformis within the inguinal canal is the finding of AH on computed tomography (CT). In the present case, the inflammatory parameters of the patient were unremarkable.

Preoperative diagnosis of AH has been reported in English literature.⁸ However, it is often diagnosed

intraoperatively.¹³ This is because general surgeons do not routinely request preoperative imaging tests. There are statements in the literature that preoperative CT scans can be “helpful with minimal functionality” or “practically impossible”.⁹ However, preoperative CT will provide valuable information about the contents of the hernia sac. Our case was diagnosed with preoperative clinical examination, and radiological imaging was not performed.

CONCLUSION

Amyand's hernia (AH) is a rare form of inguinal hernia. Preoperative diagnosis is complex, and the diagnosis is usually made during surgery. It should be kept in mind that the diagnosis of AH may be encountered in patients of all age groups who will be operated on with a preliminary diagnosis of inguinal hernia. AH should be treated according to its type.

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Contributors: MK proposed the study and wrote the paper. All authors contributed to the design and interpretation of the study and to further drafts.

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