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Amyand's Hernia: Case Report and Therapeutic Strategy

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Abstract **Case Report**

Amyand's hernia corresponds to an appendix contained in an inguinal hernia sac. Its frequency in the literature varies between 0.2 and 1.7% and the presence of associated acute appendicitis is extremely rare. The most formidable complication is severe peritonitis secondary to appendicular perforation. The surgical intervention consisted of a reintroduction of the appendix intra abdominally, and resection of the hernial sac, then, a cure of the hernia with placement of a prosthesis. The postoperative consequences were simple. Questions remain as to its pathophysiology, clinical particularity and treatment. More research and evidence is needed, which will be difficult to achieve due to the rarity of Amyand's hernia.

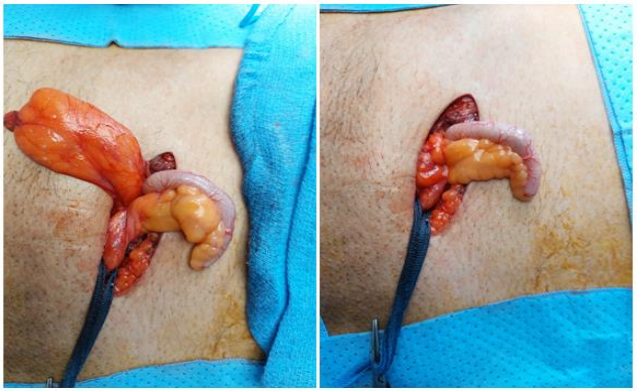
Keywords: Amyand, hernia, appendix, inguinal.

INTRODUCTION

Amyand's hernia is defined as an inguinal hernia, containing the appendix within the hernia sac [1]. Incidence of this rare condition rises up to 1% (0.19–1.7%) of all inguinal hernia cases [2]. Inflammation of the appendix within the inguinal sac is even rarer, as it corresponds to 0.1% (0.07–0.13%) of all Amyand's hernia cases [3].

CASE REPORT

A 60 year old male presented to the emergency department with a history of right lower quadrant pain, and complaint of a pain and swelling in the right inguinal region for the past three weeks that increased gradually in size. Physical examination included an indirect right inguinal hernia incomplete, and reductible type with positive cough impulse. Patient was diagnosed as indirect inguinal hernia. We made a preoperative diagnosis of right inguinal hernia and we planned a hernia mesh repair. During surgery, the hernia sac contained the appendix. The appendix was totally normal, not congested, not inflamed, and there were adhesions with the sac so the adhesiolyses was difficult and we didn't make the appendicectomy. The patient postoperatively received fluid therapy and antibiotherapy and was discharged on postoperative day 2.



DISCUSSION

Amyand hernia is an inguinal hernia that contains the appendix within the hernia sac. Amyand described the first case of incarcerated inguinal hernia containing a perforated appendix in a 11 year old boy in 1735 [4].

A ligation of the hernia and appendicectomy were performed simultaneously. This hernia should'nt be confused with De Garengeot hernia after René Jacques croissant de Garengeot, who described in 1731 a case of fermoral hernia that contains a non-inflamed appendix [5].

Physical examination will often reveal swelling in the right groin, pain and tenderness. Other symptoms may appear like fever, vomiting, and different gastrointestinal symptoms, depending on appendix's situation: normal, inflamed, perforated or gangrenous [6].

CT scan shows a direct visualization of the appendix inside inguinal canal [7]. The pathogmnomonic sign for Aymand's hernia is a blind ending tubular structure inside the hernia sac, arising from the base of the cecum, wall thickening, hyperemia and periappendiciceal fat stranding [8]. Indirect sign of Amyand's hernia can be the proximity of coecum to the hernia sac [9].

Therapeuthic strategy

Losanoff and Basson proposed a classification for Amyand's hernia, setting a therapeutic framework [10]. Singal *et al*. refer to the modification of the Losanoff and Basson classification of Amyand's hernia, also known as Rikki modification [11]. A fifth type of Amyand's hernia were added, referred as an incisional hernia through which the vermiform appendix protrudes. This type is divided into three subtypes, 5a, 5b and 5c [12].

Table-1: Losanoff and Basson classification of Aymand's hernia. [16]

Tab. 1: Losanoff and Basson classification of Amyand's hernia.

Classification	Description	Management
Type 1	Normal appendix in an inguinal hernia	Hernia reduction, mesh replacement
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 hernia repair
Type 4	Acute appendicitis in an inguinal hernia with abdominal concomitant pathology	Same as type 3 plus management of concomitant disease

Table-2: Classification of Aymand's hernia after Rikki modification [16].

Tab. 2: Classification of Amyand hernia after Rikki modification.

Classification	Description	Management
Type 1	Normal appendix in an inguinal hernia	Hernia reduction, mesh replacement
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 peritoneal and/or abdominal wall sepsis	Laparotomy, appendectomy, and primary no prosthetic hernia repair
Type 4	Acute appendicitis in an inguinal hernia with abdominal concomitant pathology	Same as type 3 plus management of concomitant disease
Type 5a	Normal appendix within an incisional hernia	Hernia reduction, primary repair of hernia including mesh replacement
Type 5b	Acute appendicitis within an incisional hernia without peritonitis	Appendectomy through hernia, primary closure of the aponeurotic gap, no prosthetics hernia repair
Type 5c	Acute appendicitis within an incisional hernia with peritonitis or abdominal wall sepsis or in relation to previous surgery.	Management as type 4

As a general rule: in case of a non-inflated appendix, we do the hernia repair without the appendicectomy [13]. Some researchers believe that realizing the appendicectomy could decrease post-operative complications by converting a clean surgery to a clean-contaminated one [14]. Besides, surgical manipulations in the base of the caecum during appendicectomy could increase the recurrence rate of the inguinal hernia [15]. Left-sided Amyand's hernia is the exception to this rule, because preventive appendicectomy is recommended, as in a case of a future appendicitis, there could be a high risk of false diagnosis [16].

Therefore, the decision should be based on common sense, patient's age, life expectancy, life-long risk of developing acute appendicitis, and the size and overall anatomy of the appendix [17].

Using protehetics material in inflamed, suppurative, or perforated appendicitis is strongly not recommended because of the increased risk of surgical site infection [18].

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