De Garengeot Hernia: A Report of 3 Cases and Bibliographic Review

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Abstract

Introduction: Amyand’s hernia is an indirect inguinal hernia, whose content is an inflamed or non cecal appendix.

Presentation of cases: We present three cases found in 2015 at the General University Hospital of Ciudad Real. The average age was 71 years, all referred inguinal mass; only one of them had an episode of incarceration, which was resolved conservatively. Programmed surgery was performed with inguinal region repair using prosthetic material and reduction of ileocecal appendix. No postoperative complications or recurrences were observed.

Discussion: The inguinal hernia is a visceral or tissue protrusion, typically the omentum, through an orifice or anatomical defect. Amyand described first appendicectomy in indirect inguinal hernias with inflamed cecal appendix within the peritoneal sac in 1735.

Preoperative diagnosis is difficult and it is based on clinical information and physical examination (diffuse abdominal pain, lump in inguinal region). Even the use of complementary tests could not give us the pertinent information. The treatment with appendicular dissection and inguinal region repair with or without prosthesis depends on the inflammatory state of the ileocecal appendix. Some authors recommend the use of laparoscopy.

Conclusions: This pathology has a very low frequency. Treatment consists of reducing it without excision, with repair of inguinal region with prosthetic material, although, laparoscopy may be useful.

ABBREVIATIONS

COPD: Chronic Obstructive Pulmonary Disease

INTRODUCTION

The presence of the appendix vermiformis inflamed or non inflamed within an indirect inguinal hernia sac is uncommon and they have an incidence about 0.1% and they called Amyand’s hernia [1,2]. The incidence of appendicitis inside the hernia sac comprises 0.9 -1.7% of all cases of appendicitis [3].

De Garengeot hernia is an femoral hernia, whose content is an inflamed or non- inflamed cecal appendix [4,5]. First described by this author, in 1731 [4].They have an incidence of 0.9% [1,6]. Appendicitis as femoral hernia sac content have an ever lower incidence, ranging from 0.13 - 08% [7].

CASE PRESENTATION

We present a series of cases objectified in the programmed surgical interventions at the General University Hospital of Ciudad Real from January 1st, 2015 to December 31st, 2015.

Case 1

A 72 years-old, male, with clinical background of lithiasis, COPD in treatment and left inguinal hernia repair. The patient consulted to Surgery consultation with a 2- year history of right inguinal mass, with an episode of incarceration solved conservatively by maneuvers of taxis. Surgery was programmed for 6 months later.

A hernia through the inguinal canal was found during the examination maneuvers of the inguinal region, which was
easily reducible. During the surgery, content was found inside the hernia sac, which was decided to open, observing the cecal appendix with no signs of complications (Figure 1). After closing and reducing the hernia sac, reconstruction was performed using the Rutkow – Robbins technique.

**Case 2**

A 64 years-old male, surgically treated for bladder cancer 7 years ago and right hip fracture. The patient was referred to Surgery consultation with a 20-year history of an asymptomatic right inguinal mass.

An indirect, voluminous right hernia was found during the examination maneuvers of the inguinal region, with no signs of incarceration, but was non-reducible. With these findings, a programmed surgical reduction was performed. During the surgery, opening of the hernia sac was made due to the presence of a mass of unknown origin. A non-inflamed ileocecal appendix was found inside, therefore, it was reduced into the abdominal cavity. The reconstruction was performed using the Rutkow – Robbins technique.

**Case 3**

A 77 years-old male, with no clinical background, consulted the General surgery consults with a 4 month history of right inguinal region mass. A right inguinal hernia with no vascular compromise was found during the physical examination maneuvers. A programmed surgery was performed, observing inside the hernia sac a non-inflamed ileocecal appendix (Figure 2). Inguinal region repair was made with the Rutkow-Robbins technique.

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**DISCUSSION**

The inguinal hernia is a visceral or tissue protrusion, typically the omentum, through an orifice or anatomical defect [8]. The usual content of the hernia sac is the omentum or small intestine, nevertheless, in rare occasions we may find bladder, Meckel's diverticulum (Littré hernia), or ileocecal appendix [8]. A French surgeon, Rene Jacques Croissant de Garengeot, first described in 1731 the non-inflamed cecal appendix inside the peritoneal sac of an inguinofoemoral hernia. Therefore, this type of hernia receives the name of De Garengeot hernia [9].

These types of hernias are more frequent in women and it is associated to congenital defects [10].

In 1735, Claudius Amyand performed the first appendectomy in children with perforated appendix inside the incarcerated inguinal hernia sac. This type of hernia is called Amyand hernia [11]. Amyand's hernia is more common in men; the average age of this patient is 42 years, although there are also pediatric cases [12]. It occurs most frequently on the right side, left hernias are associated to situs inversus, mobile cecum, malrotation of intestine, and excessively long appendix [13]. In the literature these terms are often confused, the principal difference is the protrusion site. The pathogenesis of this type of hernia is unclear. Several theories exist to explain this situation, which could be due to the existence of an abnormal union because of appendix malrotation with the cecum, an abnormal cecal length or greater cecal mobility, that would cause an appendicular pelvic location with high risk of introducing into the hernia sac [1,14]. Preoperative diagnosis is difficult to make since it is a diagnosis usually based on physical examination and clinical history [9]. Diffuse abdominal pain, inguinal region lump [11], even episodes of incarceration, is usually found. They are presented as an inguinal or femoral hernia. Sometimes they attend to the emergency with a suspected clinical diagnosis of hernia incarceration, and observing during the surgery an Amyand hernia (appendicitis in the hernia sac that may even present perforation) [15]. The diagnosis by laboratory tests is difficult, even using computed tomography [16]. Although, if preoperative diagnosis is made, it may allow us to plan the therapeutic approach, especially in cases of hernia incarceration or Amyand hernias [17].

Losanoff and Basson created a classifications of Amyand's hernia in function of their experience and described to therapeutic management: type 1 with a normal appendix; type 2 with acute appendicitis without abdominal sepsis; type 3 with acute appendicitis associated to abdominal sepsis and type 4 with acute appendicitis within inguinal hernia and another abdominal pathology associated as appendicular mucocele, adenocarcinoma or appendicular pseudomyxoma [18]. The treatment in this type of pathology is determined by the inflammatory condition in which the ileocecal appendix is found. If we are dealing with non-inflamed ileocecal appendix, appendix reduction without making appendectomy and the placement of prosthetic material in the inguinal region is recommended to repair the inguinal defect [19]. Other authors, however, indicate that even presenting no signs of inflammation, a standard appendectomy should be performed; this is based on the inability to discard a microscopic inflammation caused by compression and ischemia in the hernia neck [20]. If we find appendicitis inside the hernia sac, that is,
an Amyand hernia, the treatment is appendectomy and repair of the inguinal region with suture and it is not recommended with prosthetic material because of the high risk of developing an infection, since it is a contaminated area [21].

The use of prosthetic material reduces the risk of recurrence, but in cases with infection or inflammation of the hernia content this treatment is not recommended [22]. Although, we found in some reviews articles, the use of prosthetic material without development of surgical site infection [1]. In our cases the average age of our patients was 71 years, all with a history of inguinal mass of months or years of evolution. Only one of them had a previous episode of incarceration, which was resolved conservatively (Table 1). Programmed surgery was performed to the three cases, with inguinal region repair (using prosthetic material) and reduction of ileocecal appendix, by the Ruthow-Robbins technique. We make no appendicectomy because we observed a normal appendix vermiformis, as no macroscopic inflammation signs, as recommended Losanoff and Basson in his study [18]. According to these authors to perform an appendicectomy in these cases become a surgery to clean priori in a clean-contaminated surgery, which contraindicate the inguinal region with prosthetic material [18,26]. Others authors recommend appendectomy to avoid future complications, above all if the pediatric cases can develop future appendicitis and therefore not objectified macroscopic inflammation [23,24].

The hospital discharge was performed after six hours of surgery, according to the criteria of Ambulatory Major Surgery of our center. No late postoperative complications or recurrences were observed in any case.

Some authors state that the use of laparoscopy in hernia pathology could be useful in these situations to evaluate possible incarcerations, hernia reduction and intestinal resection in case of complications [25-27].

CONCLUSION

De Garengeot hernias present a very low frequency, few series of cases exist. The treatment of this type of hernia consists in reducing it without excision with inguinal region repair with prosthetic material. Nevertheless, laparoscopy may also allow us to decide and act in these situations. Even with a low incidence, it is important to have them in consideration during hernia repairs.

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REFERENCES


