



Case Report of Herniorrhaphy with Incidental Amyand and Appendectomy

Stanley M Augustin, Barbara Nguyen and Armand E Edalati*

Department of Surgery, Truman Medical Center Hospital Hill, USA

Abstract

Amyand hernias, an appendix within an inguinal hernia sac, occur in 1% of all inguinal hernias. These hernias are frequently discovered accidentally during inguinal herniorrhaphy. This paper describes a 22-year-old male who presented to our clinic in an academic institution with complaint of a right inguinal hernia and was scheduled for an open hernia repair. Type I Amyand was discovered intraoperatively, and the appendiceal artery was ligated during hernia sac dissection. Lichtenstein hernia repair was performed followed by a laparoscopic appendectomy. In the Losanoff & Basson classification, Type I Amyands are managed by appendiceal replacement and tension free mesh hernia repair. Literature review characterized other alternatives including appendectomy, but none documented an approach such as ours. Amyands are rare and we present a novel technique for a non-acutely inflamed Amyands (Type I), by Lichtenstein hernia repair and a laparoscopic appendectomy.

Keywords: Case report; Amyand hernia; Herniorrhaphy; Laparoscopic appendectomy

Introduction

Amyand hernias, defined as an appendix within an inguinal hernia sac, dates back to a case performed in 1735 by European surgeon Claudius Amyand [1,2]. The incidence for Amyands is approximately 1% of all inguinal hernias [3]. There is a low incidence of co-occurring appendicitis, suspected as secondary to mechanical incarceration by abdominal wall muscles, or from a primary inflammatory process causing impingement at the internal inguinal ring [2]. Furthermore, relatively recently Losanoff & Basson made a classification system guiding management for Amyand hernias based on the presence of an inflamed appendix [3]. The patient presented to an academic institution for an elective open hernia repair with a hernia notable for the presence of a non-acutely inflamed appendix and per the Losanoff & Basson classification, ideally should have been managed with appendiceal replacement into the abdominal cavity and a hernia repair. Intraoperatively, the appendix suffered vascular compromise, during the adhesiolysis necessitating an appendectomy. Detailed in this article is our novel approach, as a result of our clinical decision making for this particular Amyand hernia in the setting of an emergent appendectomy without appendicitis.

Case Presentation

A 22-year-old African American male presented to our general surgery clinic with a right-sided inguinal hernia, previously diagnosed at an outside institution. The patient had no pertinent past medical or previous abdominal surgical history. On physical examination there was a 44 painful swelling present with Valsalva in the right inguinal region. Patient was scheduled for an open right inguinal hernia repair one week later, with a chief resident and seasoned attending with 20 years experience. During dissection a type I Amyand hernia was discovered and the appendiceal artery was sacrificed due to significant adhesions. Out of concern for the vascular integrity of the appendix, intraoperative decision was made to proceed with an appendectomy. First, to minimize contamination of the mesh, the appendix was reduced and sac was closed then a Lichtenstein hernia repair was performed with polypropylene mesh and polyester sutures. Next the incision was closed and an appendectomy was performed laparoscopically. There were no complications during the surgery. The postoperative period and 2-week follow up were unremarkable, patient tolerated procedure well and was eager to return to work (Figure 1).

Discussion

Amyand hernias first date back to a case performed in 1735 by English surgeon Claudius Amyand [1,2]. The incidence for Amyands is approximately 1% of all inguinal hernias [3]. There is

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*Correspondence:

Armand E Edalati, Department of Surgery, Truman Medical Center Hospital Hill, 2301 Holmes St, Kansas City, MO 64108, USA,
E-mail: aeecn2@hotmail.com

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Figure 1: Image above captured intraoperatively illustrates a lengthy appendix held outside of the hernia sac dissection in the inguinal region. Appendix labeled with purple arrow.

a low incidence of co-occurring appendicitis, suspected as secondary to mechanical incarceration by abdominal wall muscles, or from a primary inflammatory process causing impingement at the internal inguinal ring [2]. Management of the Amyand hernia is guided by the Losanoff & Basson classification. Type I is characterized by the presence of a non-acutely inflamed appendix, and the management for which is replacement followed by mesh-based herniorrhaphy [3]. However, in the setting of an episode of appendicitis, mesh is deferred and due to the shift from clean to contaminated operation, the appendix removed from the same incision [4,5]. Per Losanoff & Basson classification type II, acute appendicitis without abdominal sepsis should be treated by an appendectomy through the hernia incision with primary repair of the hernia without the use of mesh [6]. Type III includes sepsis of the peritoneum or the abdominal wall and is also treated by primary hernia repair and an appendectomy. Type IV characterizes an Amyand hernia with a featured abdominal pathology, which may be related or unrelated to the hernia. The treatment for type IV is similar to type II, but also includes focusing on elucidating the abdominal pathology. In our literature review, cases previously described paralleled ours, but alternative methods have not suggested laparoscopic appendectomy. In contrast to our case, a majority of the literature describes Amyands in the setting of acute appendicitis. Ours a Type I featured a non-inflamed appendix, therefore carrying a lower risk for contamination. One case discussed a pediatric Amyand hernia with concurrent appendicitis, which was managed by laparoscopic reduction and appendectomy followed by an open primary hernia repair. This is in line with surgical principles for clean and contaminated wounds as well as the type II Losanoff &

Basson management [6,7]. Mesh hernia repair was deferred due to appendiceal resection in the setting of an acutely inflamed appendix. There were two cases of alternate management for non-inflamed Amyands, which included mesh herniorrhaphy and appendectomy. One featured an appendiceal mass leading to an appendectomy through the open hernia sac due to concern for infection or malignancy; interestingly, this is the first case of a sliding hernia with schistosomiasis [8]. Follow-up in this case was uneventful, despite mesh placement in a clean-contaminated wound [5,8,9]. The other case featured a preoperatively radiologically characterized Amyand hernia managed entirely laparoscopically with mesh hernia repair followed by appendectomy [10]. The key difference, in this case, is that the Amyand hernia was discovered preoperatively which affected the case parameters.

We would like to further emphasize that our approach is novel in the sense that it is specific to an incidentally discovered non-inflamed appendix on a preoperatively planned inguinal herniorrhaphy with an open approach for inguinal hernia sac exploration. Although rare, we would suggest this approach for future scenarios of Amyand hernias without an inflamed appendix.

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