SciMedCentral

Journal of Surgery & Transplantation Science

Case Report

Amyand's Hernia, Report of Three Cases and Discussion of Management

Luis Angel Medina Andrade[1]*, Stephanie Serrano Collazos[1], Maria de los Angeles Martinez Ferretiz[1], Eduardo Vidrio Duarte[2], Maricela Jimenez Lopez[3], Enrique Rosales Castañeda[3], Luis Manuel Souza Gallardo[3], Sheila Urbina Hernandez[4], Jessica Gonzalez Noriega[5] and Uriel Maldonado Aparicio[5]

[1]*General Surgery Department, Hospital General Regional #17,UQROO, México*
[2]*General Surgery Department, Hospital Angeles Metropolitano, Universidad La Salle, México*
[3]*General Surgery Department, Centro MédicoNacionalSiglo XXI, UNAM, México*
[4]*Instituto de Estudios Superiores de Chiapas. Hospital Rural Prospera #1. IMSS, México*
[5]*Universidad Nacional Autónoma de México. Hospital General de Zona #1. IMSS,México*

***Corresponding author**
Luis Angel Medina Andrade, General Surgery Department, Universidad de Quintana Roo. Instituto Mexicano del Seguro Social, Hospital General Regional No. 17, Servicio de Cirugía General, Av. Politécnico Manzana 1 Lote 1 Región 509 C.P. 55750, Cancún, Quintana Roo, Tel: 5599 8111 4201; Email: buismedina_5@hotmail.com

Submitted: 26 December 2015

Accepted: 18 January 2016

Published: 21 January 2016

ISSN: 2379-0911

Keywords

- Amyand's hernia
- Inguinal hernia
- Hernioplasty
- Appendicitis
- Intestinal obstruction

Abstract

Background: Amyand's hernia is defined as an inguinal hernia containing vermiform appendix. Is a very infrequent pathology with an incidence of 0.4 to 0.6% of all inguinal hernias. The diagnosis is difficult and usually a surgery finding, needing surgeon's best knowledge about this pathology for better outcomes.

Cases presentations: We report 3 cases of Amyand's hernia presented in different Medical Centers, with variations in clinical presentation, diagnosis and management, showing the lack of information in literature about the correct surgical treatment and different options available. Two of the cases were presented as an incarcerated inguinal hernia, one woman and one man. Woman presented ischemic appendix tip and ileum ischemia, with ileum reperfusion after manipulation and posterior reduction, appendectomy was developed and Rutkow-Robbins hernioplasty uneventfully. Men presented an 8 hours of evolution incarcerated right inguinal hernia, with nausea, vomiting and intense pain. Appendix was not affected and appendectomy was developed with a Rutkow-Robbins hernioplasty posteriorly. Third case was a 72 year-old-man with eight years inguinal hernia, hernioplasty was elective scheduled. Vermiform appendix was found in hernia sac, appendectomy and Rutkow-Robbins hernioplasty was scheduled. All patients were discharged uneventfully 24 to 48 hours later and without complications at 8, 4 and 4 months follow up respectively.

Conclusion: The low incidence and lack of information about this pathology, management and outcomes with different surgical options make it difficult to select the better treatment for each case. Studies about results with different treatment options would be difficult to achieve for the low incidence of this pathology, but the cases presented and information reviewed would encourage appendectomy and use of mesh hernioplasty as a safe and feasible surgical option in all cases.

INTRODUCTION

Amyand's hernia was defined by Claudius Amyand in 1735 as an inguinal hernia containing vermiform appendix [1,2]. In some cases this hernia could present with cecum, ileum, bladder or omentum in hernia sac too. This pathology is very rare, with an incidence of 0.4-0.6% of all inguinal hernias. Hernia sac could contain and inflamed appendix or not, with appendicitis incidence estimated in 0.07-0.13%, regardless of the stage of presentation [2]. Diagnosis usually is an incidental finding during surgery and the treatment options have been discussed along history without a base evidence approach, with some authors arguing not to perform appendectomy if it is not affected [3], and other's supporting this conduct to avoid future interventions. Another discussion is about the use of mesh in cases of appendectomy for the higher infection risk but in some cases this conduct have been used with excellent results [2,4].

CASE PRESENTATION

Case 1

56-years-old woman come to emergency room with a 10 hours evolution right inguinal severe pain. She mentioned previous hiatal hernioplasty, a cesarean and smoking 6 cigarettes daily. Other pathological background was denied. In the morning after carry a big box she presented an inguinal painful mass and tried to reduce it manually without success. Two hour later she was nauseous and vomited four times before assisting to a physician who administered an analgesic without improvement and sent it to hospital. At physical exam with Glasgow 15, 100 beats per minute, 25 breaths per minute, without acute abdomen signs but an evident mass of 13cm diameter in right inguinal region, no tissue ischemic changes, severe pain at palpation and peristalsis at auscultation (Figure 1A). Incarcerated right inguinal

hernia was diagnosed. An ultrasound was done and reported a non-compressible mass of 3.5x2.2 cm in hernia sac, with liquid surround it. An emergency open hernioplasty was carried out, finding an ischemic ileum segment of 10cm in the hernia sac and vermiform appendix of 6cm with tip ischemia (Figure 1B). After manipulation ileum presented reperfusion and was reduced to abdominal cavity. Appendectomy was carried out and a Rutkow-Robbins hernioplasty with polypropylene mesh was done. Patient was discharged 48 hours later. After 8 months follow up she presented no complications.

Case 2

35-year-old man come to surgery consult with a right inguinal hernia of 8 years of evolution. He was from an indigenous community and did not assist with a surgeon previously. At interrogatory without pathological background. He refers a week without reduction of the mass to abdominal cavity as usual, with food intolerance and only liquid consumption, sometimes with vomiting after ingestion. At physical exam with Glasgow 15, 80 beats per minute, 22 breaths per minute, abdomen without acute abdomen signs, in right inguinal region presented an inguino-scrotal hernia of 15 cm diameter without reduction at maneuvers (Figure 2A). Incarcerated right inguinal hernia was diagnosed and an emergency hernioplasty was scheduled. After sac was open we found the vermiform appendix, cecum, ascending colon and an ileum segment of 15cm (Figure 2B). Appendix not showed inflammation signs and appendectomy was developed with Rutkow-Robbins hernioplasty posteriorly using polypropylene mesh. Patient was discharged uneventfully 24 hour later and at 4 months follow do not have any complications.

Case 3

72-year-old man with an eight years evolution right inguinal hernia was scheduled for hernioplasty. He had not pathological background. At physical exam presents a right inguino-scrotal hernia with 8cm of diameter, partially reductible without possible palpation of inguinal ring diameter, but without incarceration signs. At surgery he presented an inguino-scrotal no reductible hernia, containing vermiform appendix in hernia sac, it does not present inflammation signs, only multiple sac adherences (Figure 3). Appendectomy was developed and Rutkow-Robbins hernioplasty with polypropylene mesh accomplished without complications. Discharge uneventfully was carried out 24 hours later. At 4 months follow up patient was asymptomatic.

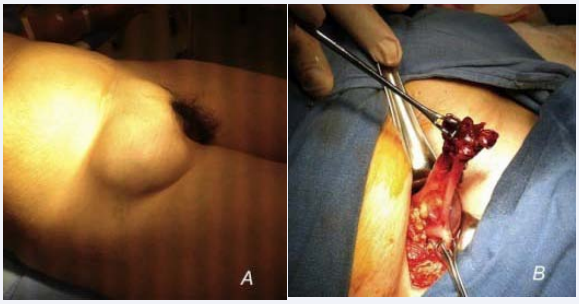

Figure 1 A Right incarcerated inguinal hernia. B. Vermiform appendix with tip ischemia.

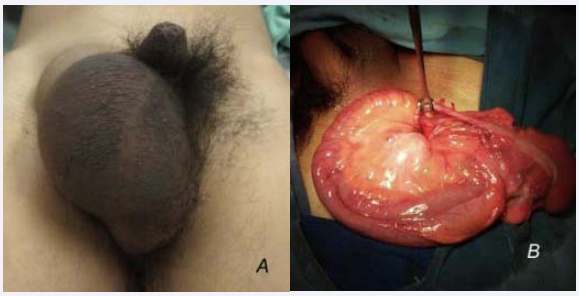

Figure 2 A Right inguino-scrotal incarcerated hernia. B Ileum, cecum and vermiform appendix in the hernia sac without inflammation signs.

Figure 3 Vermiform appendix that was in the inguinal sac with multiple adherences but without signs of acute inflammation.

DISCUSSION

Amyand's hernia is a rare pathology that have been identified many centuries ago, and precisely for the low incidence previously estimated in about 1% of all inguinal hernias and in recent series about 0.4-0.6% [1,2], reports about the management with better outcomes does not exist, and previous case reports only present the author's treatment experience without an evidence based approach, with some classic ideas about wound infection risk and mesh use in clean-contaminated cases that have evolved along history [5,6].

Pathophysiology of Amyand's hernia is not well known, but some theories suggest that intermittent compression of appendix produce blood supply compromise, reducing perfusion leading to inflammation and adhesions, following by non-reductibility of the segment. This rare presentation frequently is favored by a mobilized ascending colon and cecum considered to predispose vermiform appendix incarceration. Intra-abdominal increased pressure for abdominal muscles contraction or another cause must contribute to further inflammation and appendicitis in 0.08-0.13% of cases [7-9].

Physical exam will reveal swelling in the groin as the most common finding, followed by tenderness, pain, fever and vomiting [10]. Vermiform appendix's location would predispose other symptoms including fever, vomiting, gastrointestinal symptoms and bowel obstruction, but this connection is inconsistent, because the neck of the hernia will usually prevent the spread of inflammation and limit peritoneal irrigation, making the clinical image duller than expected [11].

Amyand's hernia remains an incidental finding during surgery in the majority of cases. Ultrasound or abdominal

tomography could be useful to confirm diagnosis, showing a blind-ended non-compressible tubular structure in the first. In the laparoscopic era Amyand's hernia will be diagnosed in many cases during laparoscopy, and the trans abdominal hernioplasty have reported good results [1,12].

Most authors believe that when the appendix is incidentally found and shows no signs of inflammation, prophylactic appendectomy is not necessary whereas others choose to treat all their patients with appendectomy [1,2,7-11]. We must remember that appendicitis is an histopathology diagnosis and 15-20% of biopsies do not correlate with clinic first appreciation, open the possibility of normal appendix diagnosis clinically, but acute appendicitis in pathology exam [13,14].

Surgical management with tension techniques in cases of Amyand's hernia plus appendicitis, as recommended by the majority of authors in previous reports, is associated with 30% hernia recurrence and/or wound dehiscence [15].

Many years ago the use of prosthetic mesh in clean-contaminated or contaminated wounds was contraindicated. This ideas still being applied for many old school surgeons. An extensive worldwide investigation in literature supports the use of prosthetic mesh in contaminated fields in multiple scenarios including strangulated hernias with bowel resection, para-stomal hernia prophylaxis, trauma open abdomen or procedures including breaching gastrointestinal tract [6].

Nieuwenhuizen and colleagues reported the outcomes of inguinal and ventral hernias operated on for acute incarceration and strangulation, in which 99 had mesh placed and 103 underwent primary suture repair. These investigators found wound infection rates of 7% with mesh and 18% without mesh [16].

In a combined analysis of results of prosthetic mesh repair in cases of strangulated inguinal and incisional hernias available in the literature conducted by Bessa and Abdel-Razek, 572 patients were analyzed, bowel resection was required in 14.7% of cases, with a wound infection rate of 4%, seroma rate of 3.8%, and mesh infection only in 1 patient (0.2%) [17].

The presented cases, with surgical decisions based in literature evidence and good outcomes, must encourage surgeons to change his daily practice in multiple procedures like Amyand's hernia management or other procedures requiring mesh use in clean-contaminated or contaminated wounds, to offer the best evidence based treatment options and achieve better outcomes, reducing hernia recurrence or risk of future surgeries. For this reasons we recommend perform appendectomy in all cases of Amyand's hernia and use mesh to perform the hernioplasty as a safe and feasible procedure.

REFERENCES

1. Morales-Cárdenas A, Ploneda-Valencia CF, Sainz-Escárrega VH, Hernández-Campos AC, Navarro-Muñiz E, López-Lizarraga CR, et al. Amyand hernia: Case report and review of the literature. Ann Med Surg (Lond). 2015; 4: 113-115.

2. Michalinos A, Moris D, Vernadakis S. Amyand's hernia: a review. Am J Surg. 2014; 207: 989-995.

3. Cigsar EB, Karadag CA, Dokucu AI. Amyand's hernia: 11years of experience. J Pediatr Surg. 2015.

4. Saggar VR, Singh K, Sarangi R. Endoscopic total extraperitoneal management of Amyand's hernia. Hernia. 2004; 8: 164-165.

5. Alberto Córdova, Germán Viscido, Héctor Picón Molina, Rafael Palencia. Hernia de Amyand: comunicación de dos casos reparados con técnica de Rutkow-Robbins. rev hispanoam hernia. 2014; 2: 111–114.

6. Carbonell AM, Cobb WS. Safety of prosthetic mesh hernia repair in contaminated fields. Surg Clin North Am. 2013; 93: 1227-1239.

7. Kwok CM, Su CH, Kwang WK, Chiu YC. Amyand's Hernia - Case Report and Review of the Literature. Case Rep Gastroenterol. 2007; 1: 65-70.

8. García-Canoa Eugenio, Martínez-Gasperina José, Rosales-Pelaezb César, Hernández-Zamora Valeria. Hernia de Amyand y apendicitis complicada; presentación de un caso y elección de tratamiento quirúrgico. Cirugía y Cirujanos. 2015.

9. Ghafouri A, Anbara T, Foroutankia R. A rare case report of appendix and cecum in the sac of left inguinal hernia (left Amyand's hernia). Med J Islam Repub Iran. 2012; 26: 94-95.

10. Emine Burcu Cigsar, Cetin Ali Karadag, Ali Ihsan Dokucu. Amyand's hernia: 11 years of experience. Journal of Pediatric Surgery. 2015.

11. Michalinos A, Moris D, Vernadakis S. Amyand's hernia: a review. Am J Surg. 2014; 207: 989-995.

12. Sahu D, Swain S, Wani M, Reddy PK. Amyand's hernia: Our experience in the laparoscopic era. J Minim Access Surg. 2015; 11: 151-153.

13. Sancho Muriel Jorge, Torregrosa Gallud Antonio, García Pastor Providencia, López Rubio Mario. Hernia de Amyand: presentación de tres casos y revisión bibliográfica. Rev hispanoam hernia. 2015.

14. Felmer E. Orlando,Castillo F. Erick, Kuschel R. Carla, Carcamo I. Carlos. Apendicectomia en blanco. Análisis de 106 casos. Cuad. Cir. 2006; 20:11-15.

15. Massimo Mongardini, Alessandro Maturo, Livia De Anna, Valerio D'Orazi, Paolo Urciuoli, Giada Livadoti, et al. Appendiceal abscess in a giant left-sided inguinoscrotal hernia: a rare case of Amyand hernia. SpringerPlus. 2015; 4: 378.

16. Nieuwenhuizen J, van Ramshorst GH, ten Brinke JG, de Wit T, van der Harst E, Hop WC, et al. The use of mesh in acute hernia: frequency and outcome in 99 cases. Hernia. 2011; 15: 297-300.

17. Bessa SS, Abdel-Razek AH. Results of prosthetic mesh repair in the emergency management of the acutely incarcerated and/or strangulated ventral hernias: a seven years study. Hernia. 2013; 17: 59–65.

Cite this article

Medina Andrade LA, Collazos SS, de los Angeles Martinez Ferretiz M, Duarte EV, et al. (2016) Amyand's Hernia, Report of Three Cases and Discussion of Management. J Surg Transplant Sci 4(1): 1020.