Prosthetic Mesh Repair for Incarcerated Recurrent Inguinal Hernia Containing an Acutely Inflamed Appendix

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Citation

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Abstract

The diagnosis of acute appendicitis in an incarcerated inguinal hernia is rarely made pre-operatively and the clinical features are unlikely to suggest the diagnosis. The recommended technique of hernia repair using prosthetic mesh is not advocated in the presence of acute appendicitis. A 68-year-old man with a recurrent incarcerated inguinal hernia was found to have an acutely inflamed appendix in the hernia sac. Appendectomy and repair with prosthetic mesh were carried out without any complications. This approach is supported by evidence in the medical literature pertaining to the use of prosthetic mesh for incisional hernia repair in contaminated fields. Prosthetic mesh repair of incarcerated inguinal hernia containing an acutely inflamed appendix appears to be appropriate in the absence of gross contamination or perforation.

INTRODUCTION

The presence of the vermiform appendix in a hernia sac is a rare occurrence. Acute appendicitis in an incarcerated recurrent inguinal hernia has been previously described only once (1). The risk for recurrence after inguinal hernia repair is significantly lower for anterior tension-free repair than for other techniques (2). The use of mesh for hernia repair in potentially infected operations is controversial but has been advocated by some authors in the absence of gross contamination (3). We describe a patient with acute appendicitis in an incarcerated recurrent inguinal hernia who underwent emergency appendectomy and mesh repair without complication.

CASE REPORT

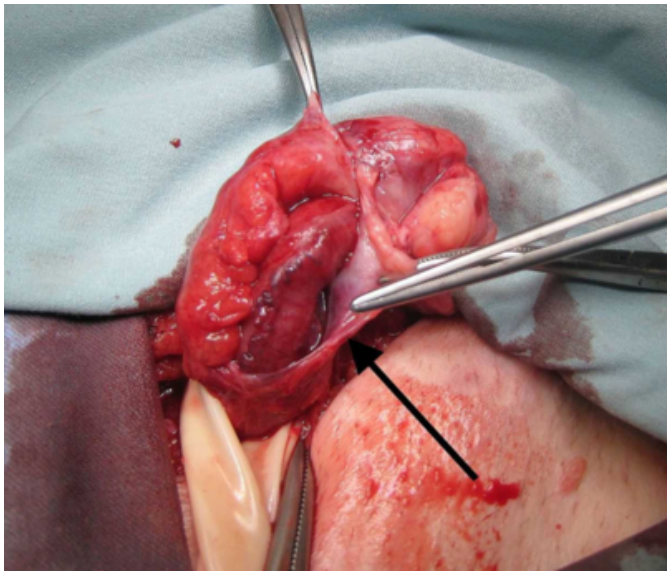
A 68-year-old man was referred to the Emergency Department with a 6-day history of persistent and painful swelling in the right groin of sudden onset, associated with central abdominal pain and loss of appetite. There were no other gastrointestinal symptoms. He continued to function normally. On the day of his admission he presented to his primary care physician because the pain had persisted. The primary care physician diagnosed an incarcerated recurrent right inguinal hernia. He had had a right inguinal hernia repair 24 years earlier without the use of mesh. He was otherwise healthy.

On examination, the patient was afebrile with a pulse of 74 bpm and a blood pressure of 105/70 mmHg. He was in no distress. The abdomen was soft and non-tender. There was a very tender swelling in the right groin in the region of the old scar, with no cough impulse and no edema or erythema in the overlying skin. No attempt was made to reduce the swelling. His white cell count was 7.4 per 10^3 l with 73% neutrophils. The rest of the blood count and biochemistry were also normal.

Antibiotic prophylaxis with 1 gram of cephazolin was administered intravenously before emergency surgery. When the hernia sac was opened, an inflamed appendix was found stuck to the peripheral end of the sac at its tip (Figure 1). There was no fibrin or pus present. An appendectomy was performed with inversion of the stump using an absorbable purse string suture. A tension-free onlay mesh repair of the hernia was then carried out using a 6 x 11cm polypropylene mesh (cut down from 8 x 13cm Surgipro™ mesh, Tyco Healthcare, Norwalk, CT), fishtailed around the cord and fixed to the posterior wall with 2/0 polypropylene sutures.

Figure 1

Figure 1. The hernia sac (arrow) is open; the appendix is inflamed and stuck to the peripheral end of the sac at its tip, with no fibrin or pus present.



Histological examination of the appendix confirmed the presence of acute appendicitis and periappendicitis in the fat.

Recovery was unremarkable. The patient was discharged on the second postoperative day and review at 2 weeks revealed a normally healing wound with a good healing ridge and no signs of infection. There was no recurrence at follow-up two years after the operation.

DISCUSSION

The presence of the appendix in an inguinal hernia sac is designated Amyand's hernia after Claudius Aymand, a Huguenot refugee living in London who described the condition in 1736 (4). The vermiform appendix is found in 0.51% and acute appendicitis is found in 0.1% of groin hernia sacs (4,5). The presence of acute appendicitis in a recurrent inguinal hernia has only been described once before (1).

The reported incidence for acute appendicitis in incarcerated inguinal hernias by age and sex is variable but it has been said to be predominant in elderly females (4), or predominant in elderly males (6), and has also been described in infants and neonates (7,8,9). The pathology is poorly understood but might be related to trauma from local adhesions, resulting in edema and interruption of blood supply that lead to inflammation (4). In our case, considering the duration of symptoms and the uncomplicated appendicitis, the acute appendicitis appears to have developed as a result of the incarceration.

Pre-operative diagnosis of acute appendicitis in an incarcerated hernia is unusual (10). The symptoms and signs are not normally those of classical acute appendicitis because the acutely inflamed appendix is incarcerated in the hernia sac and is thus isolated from the peritoneal cavity. The clinical features are solely those of an incarcerated inguinal hernia. Computerized tomography might be useful (11) but is unlikely to be used for the diagnosis of incarcerated groin hernia because the diagnosis is generally a clinical one and acute appendicitis is extremely rare in this situation.

When a normal appendix is found there seems to be little disagreement that the appendix should be left in place and a prosthetic mesh repair should be carried out. For patients with acute appendicitis, most authors recommend repair without the use of prosthetic mesh because of the risk of infection (12). There have been reports about the use of prosthetic mesh in contaminated abdominal operations, although recommendations have fallen short of advising its use when there is gross contamination (3). The incidence of wound infection can be high but this requires mesh excision only occasionally (13,14). Even if infection ensues, open wounds granulate well and heal by secondary intention despite the presence of exposed mesh. The use of prosthetic mesh to repair the kind of hernia we describe appears therefore to be a very reasonable option.

It is unlikely that acute appendicitis will be diagnosed in an incarcerated inguinal hernia before operation. Since antibiotic prophylaxis is routine in incarcerated hernias, appendectomy and mesh repair in the emergency surgery of an incarcerated inguinal hernia containing an acutely inflamed appendix appears to be safe in the absence of gross contamination or perforation.

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