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Meshoma, a Rare Complication of Abdomen and Hernia Repair-A Case Report

Mostafa Sadeghi [1], Shaghayegh Beshtar [1], Moussa Abolhassani [2,3] and Alireza Tavassoli [4,*]

[1] Student Research Committee, School of Paramedical, Iran University of Medical Sciences, Tehran, Iran
[2] Department of Epidemiology, School of Public Health, Iran University of Medical Sciences, Tehran, Iran
[3] Student Research Committee, School of Public Health, Iran University of Medical Sciences, Tehran, Iran
[4] Endoscopic and Minimally Invasive Surgery Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

[*] *Corresponding author*: Professor of General Surgery, Endoscopic and Minimally Invasive Surgery Research Center, Mashhad University of Medical Sciences, Mashhad, Iran. Tel: +98-5118012806, Fax: +98-5118402972, Email: s.beigoli@yahoo.com

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Abstract

Introduction: In this study, we report a case of meshoma with ventral hernia recurrence symptoms after the use of mesh.
Case Presentation: A 52-year-old woman who had two ventral hernia surgery presented to our department. In the second surgery, a mesh is used to repair the position. After 6 months of the second surgery, she was refered to us with symptoms of acute cholecystitis. In pathologic examination, sections of mesh with interaction of a foreign body around it, including chronic inflammatory infiltration, bud cells of foreign body together with surrounding hyalinized irregular fibrotic fibers amidst the adipose tissue in the abdominal wall could be observed.
Conclusions: Although using mesh is a suitable tool to repair abdominal wall defects, mesh shrinkage and meshoma could be considered as its rare complications while it is possible to regard it as the differential diagnosis in hernia repair with the mesh in the cases of abdominal wall masses.

Keywords: Meshoma, Abdomen, Hernia, Surgery, Case Report

1. Introduction

Risk factors of hernia include the pressure inside the abdominal cavity due to obesity, carrying heavy objects, coughing with chronic pulmonary disease, straining during defecation or urination (1, 2).

There are several ways to fix the hernia spot. Among all of the current techniques, tension free method of mesh implant due to the lower recurrence rate and reduction of position stretch is considered as one of the most common approach of support, especially in recrudescent hernia (3, 4).

Meshoma (shrinkage mesh in form of a rounded mass manifestation) is one of the rare complications of mesh. Factors that increase intra-abdominal pressure such as coughing, maneuver valsalva and the lack of appropriate mesh fixation are the risks of meshoma (5). In this study, we report a case of ventral-hernia recurrent following the use of mesh.

2. Case Presentation

2.1. Patient Description

A 52-year-old woman who had two ventral hernia surgery presented in our department. In the second surgery a mesh was applied to repair the position. After 6 months of the second surgery, she was refered to us with symptoms of acute cholecystitis. The patient had a pain in her upper part of the previous operation midline incision and also in an epigastric zone in right upper quadrant (RUQ). Cholecystitis was announced as routine clinical studies results. Sonographic examinations reported an inflammatory mass associated with adhesion as well as stones in the gallbladder. Thereforethe patient who was diagnosed with acute cholecystitis, underwent laparoscopic surgery, in that standard method of cholecystectomy has been done on her gallbladder.

In the case of dissection resection, the minimal invasive approach was done in the laparoscopic method. Due to the fact that the mass of the mesh was considerably narrower than the laparoscopic incisions, we had to increase

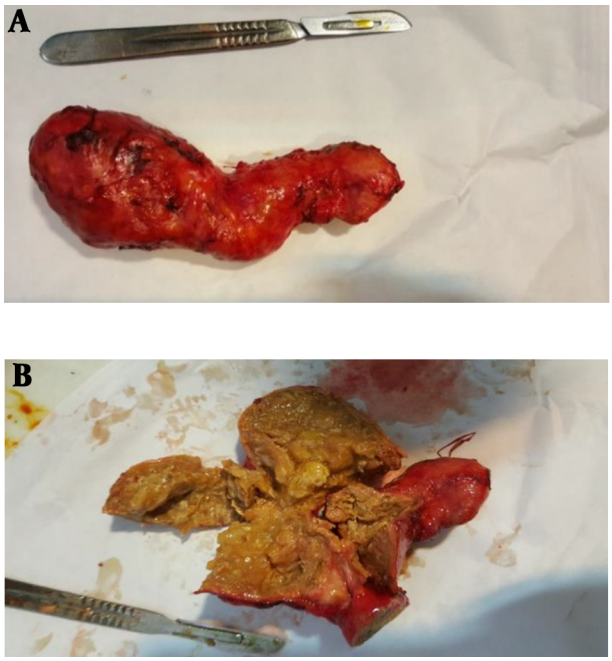

Figure 1. A, Macroscopic view of the mass; B, Cross section view of the mass

the location of the subfamily of the Xyphoid and the mass, out of the mesh as well as the mesh mass from the site.

During further evaluation, unusual or suspicious adhesions in the lower part of the gallbladder below the incision were noticeable. An abnormal mass in the size of 100 mm and a length of 120 mm was observed in the area as well. Therefore conversion to laparotomy was performed. During laparotomy process, the mass made free from adhesions and also completely isolated out of abdominal wall. Then, the mass was sent to the pathology department for the examination.

2.2. Macroscopic Pathology

In macroscopic feature there was a round tumor-like lesion 120 mm in 100 mm size with an inflammatory reaction, and in cross section view of a thick corse capsule containing source fibrotic and foreign string was seen (Figure 1).

The irregular cut mass is a relatively soft brown dense material.

2.3. Microscopic Pathology

In pathologic examination, sections of mesh with interaction of a foreign body around it, including chronic inflammatory infiltration, bud cells of foreign body together with surrounding hyalinized irregular fibrotic

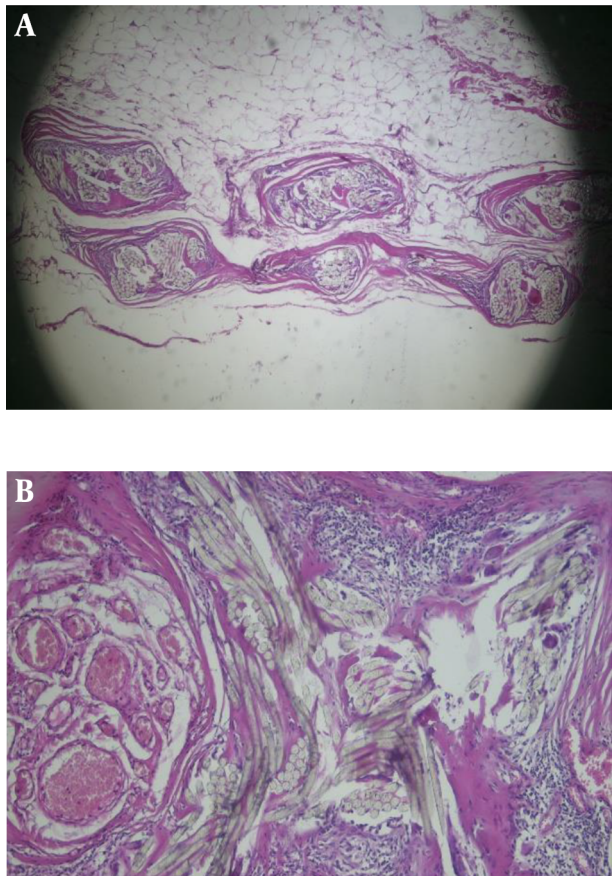

Figure 2. Microscopic examination of the meshoma. A, Sections of mesh with fibrotic response, chronic inflammation around mesh bundles in adipose tissue around the abdomen hematoxylin and eosin [H&E] × 100; B, A dense collection of cross-section and longitudinal view of mesh with severe reactive tissue, including chronic inflammation, external bud cells, and capillary-vascular proliferation with fibrosis around it: hematoxylin and eosin [H&E] × 400

fibers amidst the adipose tissue in the abdominal wall could be observed (Figure 2).

Pulled and irregular pulp with a diameter of 100 × 120 mm and a relatively smooth and fairly smooth perforated surface observed.

3. Discussion

Meshoma, an inflammatory mass with collagen and fibroblast and resulting from the use of mesh, is considered as one of the rare complications that can be seen in patients as the result of inappropriate use of the mesh. To repair the herniated positions of patients, surgeons can benefit from various surgical procedures. Hernia Infection and recurrent are common complications of hernioplasty (6, 7). Jun et al. in the United States and Van Laree et al.

in Denmark suggested that hernia relapse rate after using mesh has dramatically reduced (7). So recently mesh application is considered as one of the most common methods for hernia repair. However using mesh may have some subsequent complications.

Failure to fix the mesh in position, inappropriate fixation and lack of proper position dissection in order to put mesh can lead to shrink mesh in position and consequently, in long-term the mass may convert to the quiet ball-like mass.

In order to prevent meshoma after surgery, it is necessary to accurately observe the sterility during the operation, also appropriate antibiotic prophylaxis need to prescribe to the patient. Inserting a flat mesh properly and avoiding it to be folded is of other measures that can be used to prevent meshoma (5). In these patients, localized pain, neuropathy (due to meshoma compression on nerve) and recurrent hernia is seen (7). Since chronic pain is regarded as the only symptom that can be observed in these patient, so we are dealing with a wide range of differential diagnosis. Using ultrasound and CT scan images can be useful to determine the exact location of meshoma (7).

Finally, it is suggested that further studies should be done to compare other current procedures with these two methods, especially with respect to relapse and long-term complications, in order to better determination,as well as the best and most effective treatment in patients with hernia.

Footnotes

Conflict of Interests: The authors declare no conflict of interests.

Ethical Consideration: In this study, all ethical considerations regarding human beings considered.

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Patient Consent: The patient was enrolled with their complete consent and no compulsion. Patient personal information was kept confidential.

References

1. Townsend CM, Beauchamp RD, Evers BM, Mattox KL. *Sabiston textbook of surgery: The biological basis of modern surgical practice*. 18th ed. Philadelphia: Saunders; 2008.
2. Mulholland MW, Lillemoe KD, Doherty GM, Maier RV, Simeone DM, Upchurch GR. *Greenfield's surgery: Scientific principles & practice*. Lippincott Williams & Wilkins; 2012.
3. Brunicardi F, Brandt M, Andersen D, Billiar T, Dunn D, Hunter JG. *Schwartz's principles of surgery ABSITE and board review*. McGraw Hill Professional; 2010.
4. Sabiston DC, Townsend CM. *Sabiston textbook of surgery: The biological basis of modern surgical practice*. Philadelphia: Saunders; 2002.
5. Bjurstrom MF, Nicol AL, Amid PK, Chen DC. Pain control following inguinal herniorrhaphy: Current perspectives. *J Pain Res*. 2014;**7**:277–90. doi: 10.2147/JPR.S47005. [PubMed: 24920934]. [PubMed Central: PMC4045265].
6. Hosseini SVS. Evaluation effect of local Cefazolin on postoperative infection in herniorrhaphy with Mesh. *New York Sci J*. 2014;**7**(11):132–7.
7. Najamulhaq R, Chaudhry IA, Khan BA, Afzal M. Groin sepsis following Lichtenstein inguinal hernioplasty without antibiotics prophylaxis: A review of 100 cases. *Pak J Med Sci*. 2006;**22**(4):416–9.