CASE REPORT PEER REVIEWED | OPEN ACCESS

Omental patch to prevent mesh contact with bowel during port-site hernia repair

Benjamin Nelson, Gentian Kristo

ABSTRACT

When repairing the ventral hernias with mesh, it is important to avoid the direct contact of the mesh with the bowels as it can lead to complications such as adhesions, intestinal obstructions, and enterocutaneous fistulae. We present a case where a laparoscopic port-site hernia was repaired using intra-peritoneal synthetic mesh covered with an omental patch to prevent direct mesh-to-bowel contact. In some situations, this technique could be used as an efficient, cost-effective, and durable alternative to the use of more expensive and less available composite meshes.

Keywords: Abdominal wall reconstruction, Port-site hernia, Omental patch

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INTRODUCTION

The use of mesh in the repair of ventral hernias has been associated with significantly decreased rates of recurrence [1] and is the current standard of care. This benefit does not come without risks however and direct contact of the mesh with the intestinal loops is associated with complications such as adhesions, bowel obstructions, and enterocutaneous fistulae formation [2].

One technique which has allowed surgeons a safe option for using synthetic mesh in cases with peritoneal violation is the interposition of omentum between an onlay position and the abdominal viscera [3].

Herein, we present our experience with creating an omental patch to cover a synthetic mesh placed intraperitoneally.

CASE REPORT

A 66-year-old male was evaluated in our clinic with a symptomatic umbilical port-site hernia, one year after a laparoscopic cholecystectomy for a large gallbladder polyp. An elective, outpatient repair of the hernia was performed.

In the operating room, after the incision was carried down through the dermis, the hernia was found to contain exposed omentum without a hernia sac (Figure 1). The size of the hernia defect was 2.5x3 cm. We then decided to repair the hernia using The Prolene® Hernia System (Ethicon; Somerville, NJ, USA) (Figure 2), which consists of two layers of polypropylene mesh (underlay and onlay patches) joined by a connector, which plugs the fascial defect and virtually eliminates mesh migration [4].

To avoid the direct contact between the bowels and the underlay component of the Prolene hernia system, we decided to interposition an omental patch. Using interrupted polyglactin sutures, a piece of the herniated omentum was sutured as a patch to the sublay component of the hernia system (Figure 3).

The sublay component of the mesh with the attached omental path was then introduced into the peritoneal cavity and the onlay component of the hernia system was sutured to the fascia with interrupted non-absorbable sutures. The wound was then closed in two layers.

Postoperative follow-up shown a well-healed wound, without evidence of seroma, infection, or recurrence.

DISCUSSION

The incidence of laparoscopic port-site hernia varies from 1–22% [5, 6]. They are potentially dangerous and can lead to considerable morbidity requiring surgical interventions.

The port-site hernias are classified into three types [7] as follows:

- Early onset type: Dehiscence of anterior and posterior fascial plane and peritoneum characterized by early onset after surgery. It usually occurs as a small bowel obstruction.
- Late onset type: Dehiscence of anterior and posterior fascial plane. Peritoneum constitutes the hernia sac. Hernias usually develop several months after surgery and they are not associated with small bowel obstruction. They appear as an asymptomatic swelling by the wound site.
- Special type: Dehiscence of the whole abdominal wall. Intestine and/or omentum protrusion. There is no sac, being not a typical herniation.

Herein, we report a case of a special type port-site hernia, with protrusion of omentum, without a hernia sac. During repair, synthetic mesh was placed intraperitoneally, but the visceral aspect of the mesh was covered with an omental patch to prevent a direct mesh-to-bowel contact.

An alternative to our hernia repair technique in the presented scenario could have been the use of a composite mesh. Composite, two-sided mesh is often used intraperitoneally as they can minimize the mesh-to-viscera adhesions. They have a polypropylene layer on the parietal side to enhance rapid abdominal wall integration, and a coated, absorbable collagen barrier on the visceral side to minimize visceral attachments to the mesh. However, the parietal synthetic layer of the composite mesh can contract by 30–50% leading to rolling of composite meshes, exposing the polypropylene component to the bowel surface [8]. Furthermore, the composite mesh systems are expensive and are not necessarily available at every institution.

This case report is significant because it presents a safe, durable, and cost effective option for the surgeon who finds him or herself in the peritoneal cavity with a synthetic mesh that would otherwise be in contact with bowel.

Figure 1: Herniated omentum without a peritoneal sac.

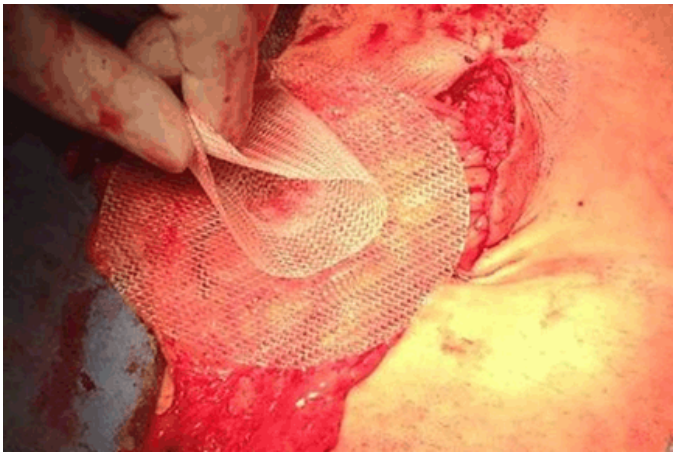

Figure 2: The Prolene hernia system.

Figure 3: Omental patch secured to the underlay component of the Prolene hernia system using interrupted polyglactin sutures.

CONCLUSION

In conclusion, every effort should be made to prevent direct mesh-to-bowel contact during repair of ventral hernias as it can lead to complications. One option that can facilitate these efforts is the use of an omental patch to cover the mesh placed in the intra-peritoneal position.

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Author Contributions

Benjamin Nelson – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Gentian Kristo – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor of Submission

The corresponding author is the guarantor of submission.

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None

Conflict of Interest

Authors declare no conflict of interest.

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