SHORT COMMUNICATION

The laparoscopic ventral and incisional hernia repair

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Abstract

We retrospectively reviewed the first twenty laparoscopic ventral and incisional hernia repairs performed at the 2nd Department of Surgery, St. Anne's Teaching Hospital, Brno from March 2003 till April 2004.
Laparoscopic repairs were performed using Biomesh mesh (Cousin Biotech, France) with a minimum of 3 cm overlap circumferentially with normal fascia and secured with spiraltacks every 3–4 cm and transparietal sutures.
All adhesions on the parietal defect are released, using scissors, and whenever possible we attempted to reduce the hernia sac.
The mean follow-up period was 7 months with a range of 2 to 13 months. There was no recurrence in the group. There were two hematomas and one seroma in our group, which disappeared without treatment. Two patients experienced transient pain, which was resolved by analgesic treatment over time. By this date, no chronic infection, bowel obstruction, or enterocutaneous fistula have been reported.
In conclusion our results are encouraging and suggest that laparoscopic ventral and incisional hernia repair is a safe, feasible, and effective alternative to open techniques. ***(Ref. 10.)***
Key words: incisional hernia, ventral hernia, laparoscopic repair, mesh.

Incisional hernias develop in about 2–11 % of patients who undergo laparotomy (2, 4).

For many years classical tension-on suture closure, or a Mayo technique with overlap of fascial edges, has been used routinely for incisional hernia repair. Many recent papers underlines the understanding of incisional hernia as a biological problem of forming stable scar tissue (8, 9).

Before the introduction of prosthesis, recurrence rates exceeded 50 % of cases. The advent of a prosthetic mesh to abdominal wall hernias treatment has dramatically reduced surgery failures to less than 10 %. Unfortunately, the positioning of the mesh makes it necessary to perform a large dissection, which increases the rate of hematomas, wound infection and other complications (2, 4, 9).

Since 1992, a number of surgeons have applied endoscopic techniques to the repair of ventral or incisional hernias. The laparoscopic attitude can to avoid the large tissue traumatism involved in classic surgery, such as large skin incisions, fascial dissections, and the need of external postoperative drainages. Several trials have reported very good results of this procedure, with few complications, low recurrence rates and less postoperative pain (1, 3, 5).

Patients and methods

We retrospectively reviewed the first experiences with laparoscopic ventral and incisional hernia repairs at the 2nd Department of Surgery, St. Anne's Teaching Hospital, Brno. We started to use this method in March 2003 and till Apríl 2004 have operated on 21 patients (13 women, 8 men, 85 % of them were obese, patients' age ranged from 37 to 72 yeares, average age was 52). At the beginning we preferred patients with small hernia defects (umbilical and smallish incisional hernias, about 2–4 cm in diameter). Recently patients with larger defects of 6–10 cm in diameter, or multilocular hernias (swiss cheese type) were indicated for this procedure, which required the use of larger meshes (15x15 cm, 20x25 cm).

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Technique

Laparoscopic repairs were performed using Biomesh mesh (Cousin Bitech, France)-polyethylene teraphtalate (polyester) mesh that is impregnated to the core with dimethyl siloxane (silicone).

Inadequate size of the mesh with insufficient overlap at the edges of the defect is probably the principal cause of failures after tension free repair. In our opinion the overlap should be at least 3–5 cm in all directions. We useed antibiotic prophylactic and low-molecular-weight heparin and employed standard supine position.

Pneumoperitoneum was established by means of Veress needle in the left subcostal area, in some cases we employed optical trocar to reach abdominal cavity safely. Three or four 5/10 mm trocarsars were placed on the flank as lateraly as possible.

Adhesions are divided and completely released from the previous operative scar and the fascial margins. Monopolar diathermy is employed to coagulate the vascularized adhesions.

Like other authors we advise using a mesh as wide as possible that covers the edges of the defects.

In case of large or multilocular hernia it is effective to mark the edges of the defect with external needles passed through the abdominal wall. This facilitates correct sizing of the mesh. Before fixing the mesh must be put on the internal surface of abdominal cavity without wrinkles or doublings.

The prosthesis is stapled circumferentially along its peripheral edge. Initially, we fastened the mesh using staples only. Now we use fixation of the prosthesis by suturing to the anterior fascial layer with a suture passer instrument.

Results

The mean follow-up was 7 months with a range of 2 to 13 months. There was no recurrence in the group.

There were two hematomas and one seroma in our group. Hematomas were not extensive and disappeared without treatment. Seroma resolved spontaneously in several days without intervention and it did not become infected.

Two patients experienced transient pain, which resolved by antalgic treatment over time. Average time of peroral antalgic therapy was 4 days (2–17 days). To this date, no chronic infection, bowel obstruction, or enterocutaneous fistulae have been reported.

Discussion

The laparoscopic route is gaining acceptance in the surgical treatment of ventral and incisional hernias, and patients who underwent this surgery profit from this new procedure: they experience less postoperative pain, shorter hospital stay, early return to normal activities, low incidence of complications and recurrences. Several retrospective and prospective trials have proved this statment (1, 2, 6, 7, 10).

In conclusion, our paper demonstrates that the laparoscopic approach has become a new option in the treatment of these surgical patients because of its feasibility, good results, and low incidence of complications.

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