Laparoscopic Incisional Hernia Repair in Obese Patients

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ABSTRACT

Background and Objectives: Laparoscopic incisional hernia repair is coming to the forefront as a preferred method of repair due to the advantages offered by minimally invasive techniques. To evaluate safety and feasibility of this approach in obese patients when performed by a general surgeon trained in basic laparoscopy with no prior experience in this technique, we reviewed our early experience in the first 18 patients.

Methods: All patients with incisional hernias presenting to a single surgeon from 2000 to 2002 were offered laparoscopic repair. Patients were informed about the limited experience of the surgeon in this particular field. Those who consented were repaired laparoscopically using a standard 4-port technique, one 12-mm port and three 5-mm ports. All patients with body mass index ≥30 were included in this review. A retrospective review of the data included demographics, operative time, blood loss, hospital stay, postoperative complications, and patient satisfaction.

Results: Nineteen laparoscopic repairs were completed in 18 patients. No conversions to open repair were necessary. All patients were females except for 2. All hernia sacs were left in place, some of which were empty while others required extensive lysis of adhesions to release sac contents. Mean fascial defect was 102.5 cm². One defect was closed primarily without mesh, while the rest were closed using Composix mesh in 1 and Dual Plus Gore-Tex mesh in the rest. Three patients were discharged from the recovery room. Mean follow-up was 24 months. No wound or mesh infections occurred. Eight patients had no complications. Eight patients had asymptomatic seromas. Two patients had hematomas; none of them required drainage. One patient had nonspecific dizziness. One patient presented with bowel obstruction secondary to early recurrence (within a week). The repair was salvaged laparoscopically. Upon evaluation by telephone calls, all patients indicated extreme satisfaction with the results.

Conclusions: A general surgeon with training in basic laparoscopy can safely perform laparoscopic incisional hernia repair on obese patients with minimal complications. The procedure requires a short learning curve of no more than 3 cases and few extra materials to be feasible at any hospital in the US. Patient satisfaction with this technique is certainly gratifying.

Key Words: Laparoscopy, Ventral hernia, Incisional hernia, Obesity.

INTRODUCTION

An escalating number of bariatric surgeries are being performed for morbid obesity every year. Although the pendulum has swung to the laparoscopic approach due to the advantages offered by laparoscopy,1–3 a significant number of cases are still done by the open technique due to the challenging and demanding nature of the laparoscopic approach. This has translated into more incisional hernias for the general surgeon to deal with.4,5 Open repair of these hernias can be very challenging with significant associated morbidity.5,6 Let alone the high incidence of recurrence7 that necessitates further interventions and wastes resources. Laparoscopic incisional hernia repair has come to the forefront as the method of choice for the repair of incisional hernias.8–14 It offers a shorter hospital stay with significantly lower morbidity and recurrence rates. Many pioneer reports on the use of this technique have alluded to its benefits in obese patients;15 but no study, to our knowledge, has specifically targeted its role in obese patients, much less whether surgeons who have no prior experience can perform this technique effectively and safely in any given hospital at large. Given the fact that postoperative morbidity is higher in obese patients, we thought these patients would benefit more from the laparoscopic approach and therefore started our experience with them. Herein, we report the outcome of our
early experience in laparoscopic incisional hernia repair in this group of patients.

MATERIALS AND METHODS

All patients presenting with incisional hernia to a single surgeon trained in basic laparoscopy from the year 2000 to 2002 were offered laparoscopic repair. Patients were informed about the limited experience of the surgeon in this particular field. In fact, each patient was told his or her sequence in the series if he or she consented to the procedure. Those who consented were repaired laparoscopically using a standard 4-port technique, one 12-mm port and three 5-mm ports, each placed in 1 quadrant of the abdomen. Pneumoperitoneum was established by a Veress needle introduced into the left upper quadrant, the least possible area for adhesions. Intraabdominal pressure was kept at 15 mm Hg. Lysis of adhesions followed when required using Endoshears. All abdominal scars were cleared completely to ensure adequate visualization thus eliminating the possibility of missing Swiss-Cheese hernias. The hernia sacs were left in place. The size of the hernia was then measured using a transcutaneous spinal needle. All dots were then connected on the skin using a marking pen. The appropriate size of the mesh was prepared to include a 3-cm overlap. Appropriate adjustment was made on the final size after adjusting for the difference between the outer and the inner diameter of the abdomen caused by the thickness of the abdominal wall panus. At least 4 (U) anchoring stitches were placed, each at 1 end of the mesh. The mesh was then marked to maintain orientation when wrapped and inserted into the peritoneal cavity. After the mesh was displayed flat, the 4 anchoring stitches were brought through the abdominal wall by using the suture passer, and the mesh was pulled snug against the abdominal wall and secured in place by multiple helical screws fired around the periphery of the mesh at 1-cm intervals thus completing the procedure.

RESULTS

All patients with body mass index (BMI) ≥30 were included in this review. Retrospective review of the data included demographics, operative time, blood loss, hospital stay, postoperative complications and patient satisfaction. Nineteen laparoscopic repairs were completed in 18 patients. Five hernias were laterally located (appendectomy incisions, colostomy incisions, splenectomy incisions). No conversions to open repair were necessary. All patients were females except for 2. Mean age was 49.5 years (range, 14 to 75). Mean body weight was 100.95 kg (range, 63.6 to 183). Mean height was 64.3 inches (range, 47.5 to 69). Mean BMI was 37.9 (range, 30 to 61.3). All hernia sacs were left in place, some of which were empty while others required extensive lysis of adhesions to release sac contents. Mean fascial defect was 102.5 cm² (range, 9 to 280). One defect was closed primarily without mesh while the rest were closed with Composix mesh in 1 and Dual Plus Gore-Tex mesh in the rest. Mean mesh size was 186.5 cm² (range, 120 to 450). Mean operative time was 125 minutes (range, 70 to 282). Mean blood loss was 22cc (range, 5 to 50). Mean hospital stay was 1.75 days (range, 0 to 6). Three patients were discharged from the recovery room. Mean follow-up was 24 months (range, 12 to 36). No wound or mesh infections occurred. Eight patients had no complications whatsoever. Eight patients had asymptomatic seromas, some of which persisted for several months. Two patients had hematomas, 1 of which was caused by a seat-belt injury during a motor vehicle accident; none of them required drainage. One patient had nonspecific dizziness. One patient presented with bowel obstruction secondary to early recurrence (within a week). The repair was salvaged laparoscopically. Patient satisfaction was evaluated by telephone survey. We were able to contact 17 of the 18 patients. All patients were extremely satisfied with the results and would choose the same approach if they were to go through it again.

DISCUSSION

As stated earlier, enough evidence is available that laparoscopic incisional hernia repair is advantageous over the open technique; however, its role in obese patients has not been clearly documented in the literature, much less whether a general surgeon at large with basic training in laparoscopy, with no prior experience can safely perform the procedure. Because we had no prior experience in laparoscopic incisional hernia repair and because 18 of the first 22 patients met the criteria for obesity (BMI ≥30), we feel that our experience can provide a reasonable answer to both issues in question. In this subgroup of patients, our results compare favorably with those in the literature. We had a good mix of different sizes as well as different locations of the hernias. All the complications were simple and resolved spontaneously except for 1 early recurrence, which in retrospect was due to a technical error on our part. Due to loss of abdominal domain and difficulty in placing the (U) anchoring stitches on the lower aspect of the defect, we relied on the helical screws alone, which are clearly not adequate to
provide solid anchorage. The patient presented 1 week later with nausea, vomiting, and diarrhea. Computed tomographic (CT) scan of the abdomen confirmed the diagnosis (Figure 2). The repair was salvaged laparoscopically; only this time, we placed 3 (U) anchoring stitches on the inferior aspect of the defect. Postoperative recovery was uneventful except for a large seroma in the hernia sac (Figure 3), which resolved spontaneously as shown on another CT scan performed a year later for upper abdominal pain (Figure 4).

CONCLUSION

A general surgeon at large with training in basic laparoscopy can safely perform laparoscopic incisional hernia repair on obese patients with minimal complications. The procedure requires a short leaning curve of no more than 3 cases and few extra materials to be feasible at any hospital in the US. Patient satisfaction with this technique is certainly gratifying.
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