SIMULTANEOUSLY LAPAROSCOPIC VENTRAL HERNIA REPAIR AND BARIATRIC SURGERY. A CASE SERIES REPORT

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BACKGROUND

Morbid obesity is an important risk factor for the development of primary and recurrent ventral hernias. It is not unusual for patients with severe obesity to be required to undergo some weight loss before elective ventral hernia repair can be performed. We report our experience performing laparoscopic bariatric surgery with simultaneous ventral hernia repair (VHR)

METHOD

This is a retrospective observational study of patients who underwent laparoscopic VHR and bariatric surgery at Obesity El Salvador from 2011 to 2020. We studied demographic variables, hernia defect size, comorbidities, surgery time, type of bariatric procedure, hernia repair strategy, and postoperative complications. At least one year of follow-up was required

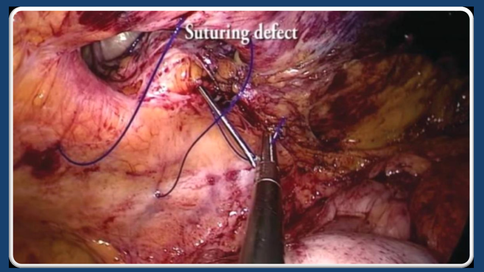
SURGICAL TECHNIQUE

All patients received a prophylactic antibiotic, we routinely use single preoperative intravenous 1gr of cefazolin according to our institutional antibiotic policy. The technique of hernia repair was IPOM or IPOM+. Our first port is introduced using the optiview® trocar, 15mmHg pneumoperitoneum is used, the rest of trocars are placed under direct vision, we intent to use the same 5 trocars position as we use in bariatric surgery alone, we use additional trocars if those are necessary. Our first step of the surgery is the adherolysis and reduction of the hernial sac contents, generally the surgeon is located at the left side of the patient at this moment, we use the harmonic scalpel to cut down the adhesions. The second step is to perform the bariatric procedure, the surgeon is routinely located at the right side of the patient for this propose, the sleeve gastrectomy (SG) is done over a 40 F Bougie, starting 3 cm proximal to the pylorus using: 2 green, and 3 to 5 blue 60mm lineal staples, we routinely reinforce the stapler line with 2-0 PDS suture, the stomach is take out without protected bag; In the gastric bypass we leaving a 30 to 50 ml vertically oriented gastric pouch, performing an antecolic antegastric Roux-en-Y gastric bypass (RYGB) with a 100 -150 cm biliopancreatic limb and 75-150 cms of alimentary limb, gastrojejunostomy is created with 30x3.5mm linear staple and close with 3-0 PDS suture over a 36 F bougie, the jejunojejunostomy is done with 60x2.5mm linear staple, close with 3-0 PDS suture, mesenteric and Petersen defects are routinely close with 2-0 polyester suture. The third step is the hernia repair, the surgeon again move to the left side of the patient; usually we used a coated synthetic mesh or PTFE-c mesh, using the previously placed working trocars as far as possible, for big hernia defects we place one to three additional 5mm trocars, the defects will be closed with transfacial 0 polypropylene suture (Fig 1) when defects can´t be closed without any undue tension, larger or "Swiss-cheese" kind of defects will not be closed, this is followed by placement of a mesh covering the defect all around at least for 5 cm, anchored to the anterior abdominal wall by tackers and transfascial suturing (Fig. 2) the specific meshes are show in the table 1. Finally, we routinely place a 19 F silicone rounded drain as we do in bariatric surgery without hernia repair.

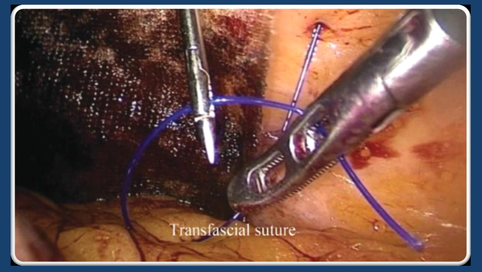
RESULTS

Between January 2011 and June 2020, fourteen patients underwent laparoscopic bariatric surgery with simultaneous VHR. five underwent Sleeve Gastrectomy (SG), six Gastric Bypass (RYGB), one Single Anastomosis Duodeno-ileal Bypass with Sleeve Gastrectomy (SADI-S), One conversion of SG to RYGB, and one revision surgery from RYGB to RYGB. Gender: 78.6% male and 21.4% female. The average age was 45.4 years (31-64). The average BMI was 45.9 Kg/m2 (36.6 - 57.9). The defect size were from 2x2cm to 5x8cm, and the mean operative time was 179 minutes (90 - 265). The hernia repair technique in all those cases was intraperitoneal onlay mesh (IPOM) using coated mesh in thirteen cases, and in one case, we used a PTFE-c. Twelve were performed using transfascial sutures and tackers fixation, and two were performed using only tackers fixation. No recurrences nor mesh infections were reported. Complications: One patient underwent a postoperative haematoma and one presented infection of the incision site of the supraumbilical port without involvement of the mesh (table 1).

AGE	GENDRE	BMI (Kg / M2)	TIME (MIN)	PERFORMED SURGERY	DEFECT (CM)	MESH	FIXATION
31	Female	44.8	90	SG, VHR, and hiatal hernia repair	3 X 4	COMPOSIX® 15x20 cm	Tackers
57	Female	57.9	120	SG and VHR	2 X 5	OMYRA® 15x15cm	TOPS and Tackers
41	Male	45.4	150	RYGB and VHR	2 X 5	PROCEED® 15x15 cm	TOPS and Tackers
fifty	Male	39.4	240	Redo RYGB and VHR	5 X 8	COMPOSIX® 21x26 cm	TOPS and Tackers
64	Male	36.6	90	RYGB and VHR	6 X 6	COMPOSIX® 15x20 cm	TOPS and Tackers
36	Male	53.2	210	RYGB, VHR and hiatal hernia repair	2 X 5	COMPOSIX® 10X15 cm	TOPS and Tackers
59	Male	41.3	240	Conversion from SG to RYGB and VHR	5 X 8	PARIETEX® 20x30 cm	TOPS and Tackers
46	Male	50.1	200	RYGB and VHR	4 X 5	COMPOSIX® 15x20 cm	TOPS and Tackers
40	Male	55.8	240	SADIS and VHR	4 X 2 & 2 x 1.5	PARIETEX® 20x30 cm	TOPS and Tackers
47	Male	47	120	SG + VHR	2 x 3	PARIETEX 15x15	TOPS and Tackers
41	Male	40.6	120	SG and VHR	2 x 2	COMPOSIX 15 x 20	TOPS and Tackers
38	Male	38	220	RYGB and VHR	3 x 3	PARIETEX® 15x15 cm	TOPS and Tackers
37	Male	39.1	195	SG, VHR	3 x 3	VENTRIO ST 12X12 cm	TOPS and Tackers
49	Female	54.6	265	RYGB, Cholecystectomy, VHR	4x3 cm	COMPOSIX 15 x 20	Tackers







DISCUSSION

Many surgeons prefer to avoid performing an hernia repair with a synthetic mesh at the same time of performing a bariatric surgery, because it is still considered that it can increase the infections and recurrences rates; however, actually we evidence showing safety performance of both procedures at the same time without an increase in the complications rate. We are reporting a small group of patients, but after one year of follow-up nobody presented any recurrences or mesh infections. It is most important to repair the smaller hernia defects at the same time of bariatric surgery; defects smaller than 5 cm have more risk to incarceration, and for this reason, it is highly recommended to repair it at the same time of bariatric surgery, specially if it is mandatory to reduce the omentum from the hernia sac to perform the bariatric surgery because those hernias have major risks of complications. For this reason, we prefer to avoid leaving this kind of hernia in place for a second stage, considering that deferring repair of the defect carries a significant risks of small bowel incarceration, leading obstruction or even perforation that could end up in disaster.

CONCLUSION

The repair of ventral hernia with synthetic mesh concomitantly to bariatric surgery is feasible, and it offers safety in term of infections. The risk of hernia incarceration and small bowel obstruction after leaving an unrepaired small hernia defect during a bariatric procedure is high and may be questionable. Larger series and prospective collected data are necessary for stronger evidence and to determinate the long-term recurrence rates.