



Laparoscopic Incisional and Ventral Hernia Repair (LIVHR): Surgical Technique, Means of Fixation and Follow-Up

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Editorial

The Laparoscopic Incisional and Ventral Hernia Repair (LIVHR) is widely used although its clinical indications are often debated. Since the first report of Le Blanc K et al. [1], LIVHR without components separation has expanded worldwide in relation to benefits of the minimally invasive approach: absence of intra parietal dissection, absence of postoperative immobilization, lower risk of broncho-pulmonary complications, lesser abdominal pain and lesser abdominal wall complications respect to open technique; these clinical benefits were identified unequivocally by many retrospective and prospective comparative studies between laparoscopy and laparotomy. The critical points of the laparoscopic repair are the minimization of traumatism of the abdominal wall and the choice of the means of fixing the most suitable to the case. A clean sheet, with little trauma to the wall and maintaining the integrity of the viscera allows a more rapid postoperative course, reducing the risk of early complications (seroma, hematoma, pain, infection). The fixation of the prosthesis is certainly a milestone for the success of the intervention by affecting the early relapse, due to shrinkage, late relapses, due to an unsuitable choice of the means of fixation in relation to the diameter of the defect and characteristics intrinsic patient and the onset of early and late postoperative pain. There was much discussion on how best to fix laparoscopic mesh; from numerous studies about the analysis and the guidelines I.E.H.S. guidelines [2] and S.A.G.E.S. guidelines [3] emerges that there is a direct correlation between a type of fixation medium used and the occurrence of postoperative pain: the goal has been to balance adequate fixation to prevent recurrence against excessive fixation that can lead to unnecessary pain. It is also important to minimize the amount of permanent component of mesh without sacrificing overlap, because large meshes require multiple, potentially painful fixation points, and have an increased risk of chronic pain from foreign body reaction. Furthermore it was shown greater onset of pain between patients in which the mesh is fastened with tacks in titanium with respect to those in which the mesh is fixed with absorbable tacks. A study by Wassenaar et al. used VAS mean scores instead of the 1 cm cutoff; it showed no difference between double crown tackers, absorbable suture and tackers, and non absorbable suture and tackers. The absence of pain was recorded in patients in which the setting is made only with fibrin glue, but they are few and small number of the studies focusing on the comparative fixation with fibrin glue to other means of fixation; in particular it lacks a proper follow-up and data concerning recurrence; it should also be considered that in the fibrin glue fastening the risk of premature shrinkage is much higher than the fixing with traditional methods, especially in patients athletic, obese people, in large defects in the wall and in the case of hernia recurrence. The original technique used by Morales-Conde S the fixing of the prosthesis with a double crown of absorbable tacks has had for these reasons a wide circulation and its effectiveness is demonstrated by several studies and recommended by the guidelines of I.E.H.S. Another element of analysis is the use of trans parietal points in association with the use of absorbable tacks; in this regard the I.E.H.S. guidelines shows how the use of at least 4 points trans parietal together with the use of tacks can be helpful in preventing late relapses in obese with a hernia defect diameter greater than 5 cm. In the guidelines I.E.H.S. states (Statements, Level 1) that “recurrences can be prevented by using increased overlap of the biomaterial and dual methods of fixation (tacks and transfascial sutures)”. The use of transfascial sutures may allow the surgeon to limit overlap to only 3 cm, whereas the use of tacks requires at least 5 cm of overlap. An intuitive understanding of biomechanical forces suggests that transfascial sutures provide better fixation, as they are secured to the strong anterior fascia. In our surgical activity we have therefore adopted a laparoscopic technique that involves the use of a mesh composite always fixed with a double crown of absorbable tacks and the positioning of at least 4 transfascial sutures to four cardinal points of

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the mesh or at its corners, which are tied at the end of intervention.

We routinely use the 4 trans fascial sutures wall in patients with BMI >30 kg / m², in case of incisional hernias or primitive hernia with diameter >5 cm and always in case of recurrent incisional hernia. We find it useful, however, the use of a mixed double crown (titanium tacks and absorbable tacks) in the case of recurrent hernia in obese patient; in this case proceed routinely accurate repositioning of the greater omentum on bowel loops to minimize the risk of visceral lesions. All patients were then contacted by telephone for information about the health status at 1 year after surgery for a total of 5 years and re-evaluated clinically and with instrumental tests (ultrasound or abdominal CT scan) in the case of suspected recurrence. The ultrasonographic instrumentations utilized was Hitachi H 21, Hi Vision™ (Esaote My Lab 25). The follow-up was realized in 88% of patient. The analysis of our clinical data (222 patient laparoscopically treated, from 2007 to 2015) showed that the recurrences (17 pz, 7,6%) occurred in patients with a mean defect size of 8 cm (range 3-15) and with a mean BMI of 30,5 Kg/m² (range 21-44); 8 patients had significant comorbidities (ASA III score). In 9 patients the mesh has been fixed only with tacks and in 8 patients the overlap of the mesh was less than 5 cm. In conclusion, LIVHR using composite mesh is an effective and safe procedure with very low morbidity and low

rates of postoperative pain and recurrence; the treatment is indicated especially in patients ASA I-III, in presence of abdominal defect with a diameter between 5 and 15 cm and in the case of obesity. The fixation technique more secure in terms of reduction of recurrent hernia seems to be the double crown of absorbable tacks associated with the positioning of 4 transparietal points, respecting an overlap of the mesh in all directions at least 5 cm. Randomized prospective studies will determine which is the best mesh and the best means of fixation.

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