

**XXV National Congress of the "Società Polispecialistica Italiana dei Giovani Chirurghi"
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LIGHTWEIGHT POLYPROPYLENE MESH AND ABSORBABLE TACKS: SAFETY AND EFFICACY IN LAPAROSCOPIC INCISIONAL HERNIA REPAIR

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Objective: Laparoscopic repair of ventral hernias has gained popularity, since many studies have reported encouraging results. The choice of the mesh and fixation methods are crucial issues in preventing complications and recurrence.

Methods: 48 laparoscopic ventral hernia repair performed consecutively in 40 patients (22 males, 18 females) for incisional hernias were prospectively evaluated. Patients were divided into two groups: All patients received totally laparoscopic incisional hernia repair by the use of the new lightweight polypropylene mesh with resorbable coverage (Physiomesh[®], Ethicon Endo-Surgery, Johnson & Johnson, Inc.) In group A patients the mesh was fixed with titanium tacks, while in group B patients the mesh was fixed with polydioxanone tacks.

Results: No major post-operative complications were reported. No differences in hospital stay, post-operative pain and return to life activities between the two groups were reported. Two recurrences (one in group A, one in group B) were diagnosed after 5 months from first repair. Both patients received laparoscopic repair by the same kind of mesh.

Conclusions: Lightweight polypropylene mesh with resorbable coverage, with its properties of easy positioning and biocompatibility, represents an innovation in laparoscopic incisional hernia repair, and should be considered for clinical intra-operative as well as long term evaluations. The use of totally absorbable fixation system should be considered as the first choice in these patients, since the rapid mesh integration process makes titanium tacks no more absolutely necessary.

ROBOTIC SURGERY LEADS TO HIGHER TROCAR SITE HERNIA INCIDENCE COMPARED TO STANDARD LAPAROSCOPY

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Objective: Surgical robots for abdominal surgery are characterized by a strong mechanical power of the robotic arms, potentially leading to high lateral stretch effect on abdominal wall layers, ultimately resulting in Trocar Site Hernia (TSH) development. Aim of the study was to compare TSH incidence in robotic abdominal surgery compared with the same procedures performed by standard laparoscopy.

Methods: Patients who underwent laparoscopic or Da Vinci robotic-assisted Roux-en-Y gastric bypass between November 2007 and June 2012 underwent a clinical assessment and an ultrasonography study (US) of the abdominal wall.

Results: 111 patients entered the study, 72 in the laparoscopic and 39 in the robotic group. The robotic group showed a significantly lower preoperative BMI (43.4 vs 49.0 kg/m², p<0.001). Preoperative incidence rates of comorbidities were not different between groups. The operative time was significantly longer in the robotic group (278.3 vs 186.8 minutes, p<0.001). The postoperative incidence of early wound infection and/or dehiscence was higher in laparoscopic group (12.5% vs 7.7%, p=ns). At US study of the abdominal wall, 21 patients in the laparoscopic group showed one or more TSH (29.2%) compared to 18 in the robotic group (46.2%).

Conclusions: This study showed a clinically significant trend towards a higher incidence of TSH in obese patients who underwent bariatric surgery with the da Vinci robotic system compared with those operated by standard laparoscopy. Although not statistically significant, this result should be further studied by larger, prospective comparative studies.

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TROCAR SITE HERNIA INCIDENCE IN BARIATRIC SURGERY PATIENTS

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Objective: Trocar Site Hernia (TSH) represent an understudied complication of laparoscopic surgery. Reported pooled prevalence in a systematic review was 0.5%, but available data are based only on symptomatic patients, while it seems to be higher when routinely assessed. Aim of the study was to assess the incidence of TSH in post-bariatric surgery patients.

Methods: Patients who underwent laparoscopic or robotic-assisted Roux-en-Y gastric bypass between November 2007 and June 2012 underwent a clinical assessment and an ultrasonographic (US) study of the abdominal wall.

Results: 111 patients entered the study; mean preoperative age, weight and BMI were 44.5 years, 129.5 kg and 47.0 kg/m². At surgery, 34 patients were diabetic (30.6%), 53 had arterial hypertension (47.8%), 43 had sleep apnea (38.7%) and 26 were smokers (23.4%). Mean operative time was 218.9 minutes (range, 90-435); the number of trocar used was 7 in 36 cases (32.4%), 6 in 69 (62.2%) and 4 or 5 in 6 (5.4%). At US evaluation, 39 patients showed one or more TSH (incidence rate 35.1%), although they were all asymptomatic. Comparing patients with and without TSH, there were no significant differences in terms of preoperative comorbidities.

Conclusions: This study confirmed that in the post-bariatric patients the clinical evaluation of the abdominal wall is highly inaccurate, while the US study showed to be an efficient diagnostic tool. Although clinically silent, TSH showed a high incidence rate in bariatric surgery population, thus suggesting that it represent a strongly underestimated postoperative complication, potentially leading to large hernias, pain and re-operations.

LAPAROSCOPIC APPROACH OF INCISIONAL HERNIA WITH PHYSIOMESH: PRELIMINARY RESULTS

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Objective: The aim of the ideal laparoscopic treatment for incisional hernia should be the intraperitoneal placement of a mesh consenting a good tissue integration on the parietal surface and a low post-operative discomfort.

Methods: From October 2012 to March 2013, 5 patients (4 M, 1 F) median age: 61 years; BMI 28,91) underwent laparoscopic hernia repair using Physiomesh (Ethicon, Summerville NJ), fixed by SecureStrap (Ethicon, LLC, Puerto Rico). Analgesia was controlled by administration of Ketorolac 30mg i.v. every 12 hours and the pain score (VAS) was recorded.

Results: The mean operating time was 35 minutes (average 25-45 min). Utilization of analgesia was prolonged for 2 days. Mean hospital stay was 2 days (average 1-3 days). Average VAS score recorded was 3 (1-5). We recorded no complications.

Conclusions: Physiomesh (Ethicon, Summerville NJ) is a lightweight, large pore, polypropylene mesh, designed as a good approach to the incisional hernia repair. The association with SecureStrap (Ethicon, LLC, Puerto Rico), as fixation device, helps to prevent mesh migration and it also improves patient quality of life during the post-operative period. One of the main advantages of using these devices is a shorter operating time, due to faster mesh placement and easier fixation. Physiomesh (Ethicon, Summerville NJ) represents a good alternative to the existing meshes. Its fixation with SecureStrap leads to a significant decrease of discomfort for the patients during the first postoperative period, early return to work and a hypothetical zero-rate of bowel adhesions to the fixation devices reducing complications and recurrence.

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VENTRAL HERNIA TREATMENT IN EMERGENCY SETTING: THE APPLICATION OF PERICARDIUM BOVINE PATCH IN CONTAMINATED OR POTENTIALLY CONTAMINATED FIELDS

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Objective: The aim of this study is to compare the outcomes of patients affected by ventral hernia treated by primary closure vs synthetic vs pericardium bovine mesh repair in contaminated field.

Methods: Between January 2002 – January 2012, 152 patients, who underwent incisional hernia repair, were divided into 3 groups: A (n=76), treated with primary closure technique; B and C (n=38 each), with reinforcement by synthetic or pericardium bovine mesh, respectively. The prosthetic groups were divided into onlay and sublay sub-groups.

Results: Significant decreases in C vs A were observed for wound infection (3% vs 37%), recurrence (0% vs 14%), and in C vs B for wound infection (53%), seroma/rejection (0% vs 34%), recurrence (16%). Patients with concomitant bowel resection (BR) (43%) showed (all P<.05) an increase of overall morbidity (55% vs 33%) and wound infection rate (42% vs 24%) compared to cases without BR. Morbidity presented no significant differences in C-Onlay or Sublay subgroups. B-Sublay subgroup were (all P<.05) lower than B-Onlay for the overall morbidity (20% vs 75%), wound infection (10% vs 68%), seroma/rejection (0% vs 46%). Overall morbidity was (all P<.05) lower in C vs B-Onlay subgroups (20% vs 75%), such as wound infection (4% vs 68%), seroma/rejection (0% vs 46%), recurrence (0% vs 21%). In C or B-Sublay subgroups, the morbidity showed no statistical differences.

Conclusions: The pericardium bovine patch seems to be safe and effective to successfully repair ventral hernia in potentially contaminated operative fields, especially in association with bowel resection.

PRIMARY INGUINAL HERNIA REPAIR: RANDOMIZED TRIAL COMPARING SUTURES, N-BUTYL-2-CYANOACRYLATE AND HUMAN FIBRIN GLUE FOR MESH FIXATION

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Objective: The aim of the study was to compare 3 techniques for groin hernia repair, using the human-fibrin-glue vs N-butyl-2-cyanoacrylate vs standard sutures for mesh fixation.

Methods: A total of 156 patients with 167 inguinal hernias (11 bilateral) underwent a plug and mesh procedure and were randomly assigned to receive either sutures (n = 59 hernias), human fibrin glue (n = 52) or N-butyl-2-cyanoacrylate (n = 56) for mesh fixation.

Results: The morbidity rate was 38.98% in the suture group, 9.62% in the fibrin glue group and 10.71% in the N-butyl-2-cyanoacrylate group (suture vs fibrin glue, p<0.001; suture vs N-butyl-2-cyanoacrylate, p<0.001; fibrin glue vs N-butyl-2-cyanoacrylate, p=NS). Short-term morbidity was significantly higher in the suture group (27.12%) than in other ones (suture vs fibrin glue, 9.62%, p=0,01; suture vs N-butyl-2-cyanoacrylate, 8.93%, p=0.004). On the other hand, the same comparison between fibrin glue vs N-butyl-2-cyanoacrylate was not statistically significant (p=NS). Long-term morbidity was significantly higher in the suture group (11.86%) than in the fibrin glue (0%, p=0.001) and in the N-butyl-2-cyanoacrylate (1.78%, p=0.03) groups. There was no recurrence in any of the groups. In the suture group, 2 patients presented chronic groin pain, 5 presented a sensation of extraneous body; 1 patient in the N-butyl-2-cyanoacrylate group presented the same sensation of extraneous body; there were no reported cases in the fibrin glue group.

Conclusions: In tension-free inguinal open repair, human fibrin glue or N-butyl-2-cyanoacrylate showed a better outcome than sutures, in terms of immediate results, and long-term data.

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CLOSURE OF THE PERITONEUM IN TAPP: TRAINING OF YOUNG SURGEONS IS FACILITATED BY V-LOC 180

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Objective: Groin hernia repair using the laparoscopic TAPP approach presents low post-operative pain with rapid return to normal patient activity compared to the open technique. Nevertheless the long learning curve, general anesthesia and increased costs due to devices are the arguments against TAPP. We report our experience utilizing self-gripping lightweight mesh (Parietex ProGrip™) and the unidirectional barbed technology suture (V-Loc™ 180) by Covidien™.

Methods: Between September 2010 and February 2013, 21 patients (20 M; 1F; mean age 49) affected by both direct and indirect groin hernia underwent TAPP repair. 4/21 patients presented bilateral hernias, 2/21 were affected by recurrent ones and 19/21 by primary hernias. No tacks or glues were needed to leave in place the Parietex ProGrip™. A V-Loc™ 180 self-anchoring thread were then used to close the peritoneum above the mesh. Two doses of Ketorolac 30 mg iv per die as analgic postoperative therapy were infused per patient.

Results: The mean operating time was 45 minutes for each hernia (average 30-60 min). Patients were discharged after 24 hours. Average VAS score recorded was 3 (1-5). We recorded no complications.

Conclusions: TAPP procedure with ProGrip™ mesh and V-Loc™ 180 thread allow time to be saved during surgery and provide an easier surgical approach for a young surgeon. Notably, by not using fixation devices costs, chronic pain and recovery are improved.

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