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Preliminary results of Sutureless Tension-free Ventral Hernia Repair. Prospective Multicenter Study.

International Hernia Study Group

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Introduction. In the ventral hernioplasties, sutures prevent mesh migration, curling or wrinkling. However, mesh suturing is time consuming, often challenging, could create tension in the mesh resulting in postoperative pain and complications.

We hypothesized that there is no need for mesh suturing in ventral hernia repair if the mesh is rigid, macroporous, made of monofilament polypropylene and has flat-shape memory. This mesh will not migrate, wrinkle or curl when placed in a closed space even without anchoring to the surrounding tissue. This prosthesis prevents hernia recurrence laying flat held in place by intrabdominal pressure and connective tissue ingrowth.

The aim of the study was a clinical evaluation of the sutureless tension-free sublay ventral hernia repair technique, which involves the use of mesh without suture anchoring.

Methods. Since October 2003, 82 (52+17+8+5) patients with all types of the ventral hernia have entered a prospective multicenter study to assess effectiveness of the sutureless repair. Patients' age was 60 ± 9 and BMI $30,5 \pm 5$. There were 61 (74%) incisional hernias and 21 (26%) primary defects. Type of the hernia according to size was as follows: W1 (defect < 5cm) – 13 (16%) W2 (5cm < defect < 10cm) – in 18 (22%) patients, W3 (10cm < defect, 15cm) – in 33 (40%), W4 (defect > 15cm) – in 18 (22%). Antithrombotic and antibiotic prophylaxis was administered on day of surgery. A semi-rigid, monofilament, macroporous, polypropylene mesh with flat-shape memory was used for the repair – Oval Patch or Hertra 0 (Herniamesh SRL, Italy). After closure of posterior abdominal fascia, the mesh was placed in retromuscular space without suture anchoring and then the anterior fascia was closed. Relaxing incisions of the anterior fascia were applied when necessary to decrease the tension. Redon drainage was placed over the mesh and additionally in subcutaneous tissue in obese. Study coordination center collected and analyzed data.

Results. Duration of the operation was 97 ± 32 min, but trimming and placement of the mesh in the anatomical space took only 2-3 minutes. Pain assessed on the first morning after surgery in VAS was 4 (1-8). Patients required tramadol or NSAIDs for 4 (2-8) days. Wound revision was necessary due to hematoma in 4 (5%) patients and wound infection in another 4 (5%). Infected mesh had to be removed in one (1,2%) patient. Fluid collection was aspirated in 5 (6%) patients. Average duration of hospitalization was 5 (3-16) days. Patients resume their usual home physical activity within two weeks after surgery. Follow up was scheduled in week 1, 6, 12 months and then yearly after hospital discharge. In early follow up – 14 (2 to 21) months, no recurrence or chronic pain was found.

Conclusions. Early results indicate that the sutureless sublay technique is safe and effective in ventral hernia repair allowing to avoid suture anchoring of the mesh. The study is continued.