

# SURGIMESH® in Inguinal Hernia Repair

## CASE REPORT - 180 DAY RE-LOOK

### BACKGROUND

An 80 year old male patient had an open left inguinal hernia repair using lightweight knitted, dual layer polypropylene (PP) mesh. Starting 5 weeks P.O. the patient began experiencing increasing pain in the left groin. Six months following the open repair a diagnostic laparoscopy was performed including an open neurectomy (x2) with nerve re-implantation and excision of the polypropylene mesh. This resolved all the pain but eight months following a recurrence developed which was repaired using a TAPP approach. A 20 x 24 cm SURGIMESH® XB non-woven PP mesh secured with permanent tack fixation (see Figure 1) successfully repaired the area. Four months P.O. the patient was pain free with an intact left inguinal area.



Figure 1 - photo courtesy B. Ramshaw, MD



Figure 2 - photo courtesy B. Ramshaw, MD

### RE-LOOK PROCEDURE

Six months following repair of the left inguinal hernia, the patient developed a right inguinal hernia which was also repaired laparoscopically (TAPP approach). The previously repaired left inguinal space was investigated and found intact with the XB mesh demonstrating no adhesion, complete neo-peritoneal formation and strong attachment of the XB mesh to the surrounding tissues (see Figure 2).

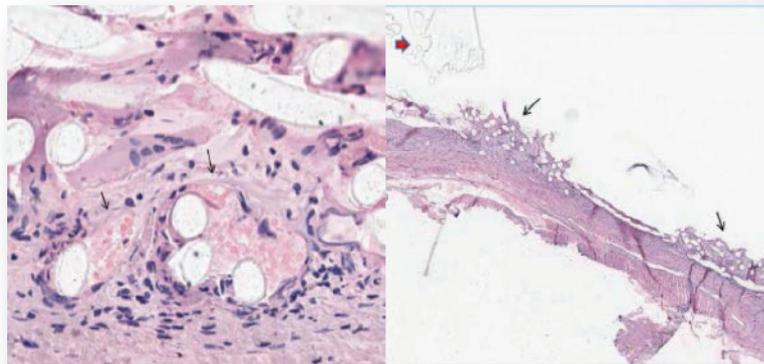


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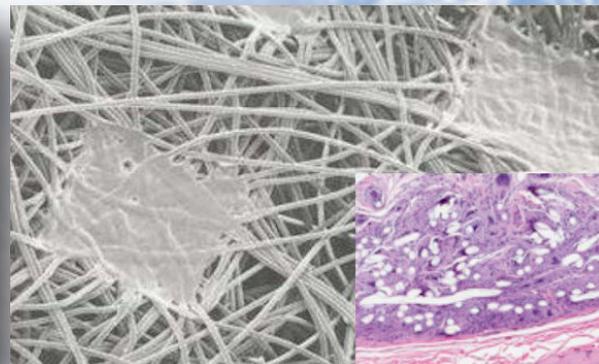
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## FOLLOW-UP AND HISTOPATHOLOGY

Following the second right inguinal repair, the patient recovered uneventfully and remains pain/recurrence free 12 months following the left inguinal repair and 6 months following the right inguinal repair. During the 2nd procedure a small edge of the previously implanted SURGIMESH XB was excised. Gross examination of the XB Mesh found the visceral surface to demonstrate no adhesion formation with a confluent developed neoperitoneum. The opposite ingrowth surface was well integrated into the surrounding tissues. Histopathology on this segment revealed complete fibrous connective tissue incorporation on the ingrowth side of the XB mesh with well vascularized intra-fiber mesh spaces and variable degrees of subacute inflammation focally concentrated near the mesh fibers. Due to sectioning artifacts the peritoneal surface of the XB mesh including silicone could not be analyzed.



**Figure 3** - Complete fibrous tissue incorporation with consistent intramesh vascularization is demonstrated at 180x (left) and 20x (right). The visceral surface of the XB Mesh was found damaged by the sectioning process tearing the silicone elastomer surface (red arrows).



**Figure 4** - Non-woven XB Mesh structure @ 50x with inset showing fibrous connective tissue incorporation at 180 days (40x).

## NON - WOVEN MESH TECHNOLOGY

SURGIMESH is a lighter-weight, non-woven, microfiber polypropylene mesh which is FDA cleared for the repair of all types of hernias (WN non-barrier & XB barrier meshes). It is thin (nominally 0.5 mm), strong and very flexible providing superior handling during surgery and comfortable repairs for patient's long term<sup>3,4</sup>. Clinical retrievals and experimental evaluations have demonstrated SURGIMESH non-woven mesh to incorporate quickly and completely (< 2 weeks) producing 100% complete vascularized fibrous connective tissue incorporation<sup>1</sup> ( see figure 4). Achieving complete vascularized tissue incorporation helps integrate the non-woven mesh intimately into the surrounding tissues and can protect it in the event of microbial challenge. With a permanent silicone barrier, SURGIMESH XB consistently prevents adhesion formation long term as demonstrated in this case report and in the medical literature<sup>2</sup>.

### References:

- 1) Hagendorn, E., et.al, Influence of Structure on Surgical Mesh Healing in Soft Tissues, Flagship Bioscience Analysis, Oct. 14.
- 2) Harris, ES, Analysis of the kinetics of peritoneal adhesion formation in the rat and evaluation of potential anti-adhesive agents, Surg, vol. 117, p. 663, Jun 1995
- 3) Smietanski, M., et. al., Five-year results of a randomized controlled multi-centre study comparing heavy-weight knitted versus low-weight, non-woven polypropylene implants in Lichtenstein hernioplasty, Hernia, v. 15, p. 495, Oct 11
- 4) Yunis, J, Safety and Efficacy of Non-Woven PP with Silicone Barrier in LVHR, ACOS Annual ACA, Sep. 11