Early wound morbidity and clinical outcomes associated with P4HB mesh compared to permanent synthetic mesh in umbilical and small to medium, routine ventral hernia repairs.

Article Summary

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Objectives

To compare early wound morbidity and clinical outcomes associated with Phasix™ Mesh to traditional, permanent polypropylene (PP) mesh in umbilical and small to medium, routine ventral hernias using data from the Abdominal Core Health Quality Collaborative (ACHQC).

What is the ACHQC Data Registry

The Abdominal Core Quality Health Collaborative aims to improve the value of care delivered to patients undergoing hernia and abdominal surgery.

"The mission of the ACHQC is to maximize the quality and value of health care for patients who suffer from hernia disease and diseases of the abdominal wall or abdominal core."

Study Design

Retrospective analysis, utilizing data collected prospectively through the ACHQC database.

Subjects and methods

- The ACHQC database was queried for patients undergoing umbilical or small to medium, routine ventral hernias between January 2012 and September 2022.
- Inclusion criteria for the umbilical hernia cohort included: all Centers for Disease Control and Prevention (CDC) wound classes (16) and all Ventral Hernia Working Group (VHWG) hernia grades (17), as well as hernia defects 5 cm, etc.). For both cohorts, the study group was comprised of Phasix™ Mesh or Phasix™ ST Mesh (P4HB) and the comparator group was comprised of various permanent synthetic polypropylene meshes (Bard™ Mesh, Bard™ Soft Mesh, Ventralex™ Hernia Patch, Ventralex™ ST Hernia Patch, Ventralight™ ST Mesh, Ventrio™ Hernia Patch, and Ventrio™ ST Hernia Patch— collectively PP.
- Clinical outcomes were assessed at 30 days.
- Umbilical hernia cohort, n = 122 patients were evaluated in each group
- Small to medium, routine ventral hernia cohort, n = 235 patients were evaluated in each group

Results

There was no significant difference in early wound morbidity, readmission, or reoperation between the P4HB and PP cohorts. A small number of patients experienced SSO, with ≤4% requiring procedural intervention. None of the patients (0% in all cases) experienced skin/soft tissue necrosis, infected seroma, infected hematoma, exposed/contaminated/infected mesh, enterocutaneous fistula, graft failure, or pain requiring intervention at 30-days. P4HB was associated with significantly greater operative time, length of stay, and use of myofascial release compared to PP ($p < 0.05$ in all cases). The real world nature of the data found that P4HB repairs utilized myofascial release significantly more frequently than PP, which provides unique insight into how surgeons are unexpectedly utilizing P4HB mesh, namely via robotic retromuscular repairs with myofascial release, leading to longer operative time and length of hospital stay. Despite "overtreating" these small hernias and the slightly more complex P4HB cases in this study, early wound morbidity and clinical outcomes associated with P4HB remained similar to traditional, permanent PP mesh.

Conclusion

Short-term clinical outcomes associated with resorbable P4HB mesh are comparable to permanent PP mesh in umbilical and small to medium, routine ventral hernia repairs, despite significant differences in operative time and length of stay. Longer-term follow-up is needed to expand on the clinical relevance of these short-term findings.

Link to publication: https://www.frontiersin.org/articles/10.3389/fsurg.2023.1280991/full

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