MESH PLUG ADVISORY
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Inguinal hernia repair is one of the most common surgical procedures performed worldwide. Although minimally invasive surgical approaches are becoming increasingly common, the majority of these procedures are still performed via open techniques. Mesh reinforcement has become standard practice due to reproducibility of technique and lower recurrence rates when compared with tissue-based repairs. There are multiple prosthetic options for open inguinal hernia repair. These include bi-dimensional (flat sheet of mesh) and three-dimensional implants. Three-dimensional implants include mesh plugs and bilayer (2 interconnected flat sheets of mesh) hernia systems.

The Lichtenstein-Amid technique is considered by most authorities the gold standard for treatment of open inguinal hernias, and involves reinforcement of the posterior wall of the inguinal canal with a single piece of a flat synthetic mesh to create a tension-free repair.

Evaluation of long-term outcomes after open inguinal hernia repair has demonstrated unacceptably high rates of severe chronic pain (up to 11%). Choice of the appropriate prosthetic material requires the surgeon to consider options that minimize recurrence rates as well as chronic pain. Multiple randomized controlled trials and meta-analysis have attempted to determine the optimal prosthetic and configuration. When evaluating outcomes between Lichtenstein-Amid and plug-and-patch repairs, the data does not demonstrate a superior technique, suggesting no added benefit with the use of plugs.

The AHS believes there are several reasons to reexamine /reassess the use of three-dimensional implants in groin hernia repairs:

1. Both the anterior and posterior planes need to be dissected during the index operation, making potential reoperation more difficult.
2. A more significant inflammatory response is observed in mesh-plug explants when compared with flat mesh.
3. Nociceptive pain secondary to plugs is frequently seen by practices specializing in the management of chronic groin pain, and often leads to re-operation with mesh removal.
4. Standard Lichtenstein-Amid repair has less frequent devastating visceral complications such as erosion and fistulae to the bladder, bowel and vessels than bi-layer and plug implants.

Current international guidelines for groin hernia management suggest to avoid plug repair techniques and global surveys show that 82% of expert hernia surgeons recommend against using three-dimensional implants. As with any hernia repair, we recommend a comprehensive discussion between surgeon and patient about the risks, benefits and alternatives to mesh utilization. Despite the paucity of data demonstrating a superior technique, we strongly support the utilization of a flat sheet of mesh only without a plug component during open tension-free inguinal hernia repairs.