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Is Next Hernia Repair Option Going to Help!!!

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Hernias are some of the most common surgical complaints in the world and are a leading cause of gastrointestinal complaints.¹ Abdominal wall hernias are the most common type of hernia to occur, and of those inguinal hernias are the most common sub-type. Due to the prevalence of inguinal hernias, much attention and innovation has been focused on their management and treatment.

While hernias can be managed non-operatively, the definitive treatment of a hernia is surgical repair. Hernia repairs are among the most common types of procedures performed by general surgeons and account for a large number of surgeries performed in the world. For patients with inguinal hernias, there are a variety of methods for surgical repair. Based on surgeon expertise and the size and location of a hernia, inguinal hernias can be repaired with open, laparoscopically, or robotic surgery. In this issue of *American Journal of Robotic Surgery*, Kudsi et al. proposes that a robotic approach to transabdominal pre-peritoneal (TAPP) inguinal hernia repair is a safe and feasible surgical option for inguinal hernia repair.

Open surgical repair of inguinal hernias has long been the gold standard of hernia repair. Open surgical repair is largely categorized into two types: non-mesh repairs and tension-mesh repairs. Non-mesh repairs are the earliest type of hernia repair and include the Shouldice repair, the McVay repair, and the Bassini repair. These non-mesh repairs do not use mesh and rely on primary closure to create tension and repair the wall defect. Tension-free mesh repairs include the Lichtenstein repair, the bilayer mesh repair, the preperitoneal mesh repair, and the plug and patch repair.² Tension-free mesh repairs do not employ primary closure to close the hernia and instead rely on placing a mesh over the defect. Meta-analysis of randomized trials have shown that tension-free mesh repairs have lower recurrence rates,³ and the Lichtenstein repair has since been adopted as the gold standard for surgical repair. When the tension-free mesh repair is contraindicated as in the case of infection or a deep wound, the Shouldice mesh-free repair is the standard of practice.

Laparoscopic surgical repair of inguinal hernias is, basically, a modified tension-free mesh repair. In laparoscopic hernia repair, the hernia defect is reached from inside the peritoneal space, where mesh is always deployed. There are only two major surgical methods to the laparoscopic repair. They are, respectively, the totally extraperitoneal hernia repair (TEP) and transabdominal preperitoneal hernia repair (TAPP). TEP laparoscopic repair is performed in the preperitoneal space so that the peritoneum is never traversed and the

surgical area is limited. TAPP repair requires the surgical instruments to traverse the peritoneum, increasing the risk of abdominal complications, but it still places the mesh in the preperitoneum.

Laparoscopic repair and open hernia repair have the same operative outcome in terms of hernia recurrence, however, laparoscopic repair is associated with decreased pain and earlier return to normal daily activities post-surgery.⁴ The choice between laparoscopy and open surgery typically depends on surgeon preference and local availability. Not all centers have the expertise to offer routine laparoscopy for hernia repair, and not all surgeons are willing and capable of doing laparoscopic repair. Laparoscopy has a learning curve that increases the operative time and costs associated with the procedure. For a surgeon with experience in laparoscopy, laparoscopic repairs may produce results comparable to open repairs.⁵ For most institutions however, open hernia repair has a shorter operating room time and lower cost⁶ than laparoscopy. Even though laparoscopic hernia repair is associated with a reduced incidence of chronic pain, the increased difficulty of the surgery and increased health-care cost prevent this surgical method from overtaking the Lichtenstein method as the gold standard for hernia repair.

Robotic surgery is a relatively new surgical approach to hernia repair and there have not been many studies conducted to measure its feasibility and outcome. Kudsi et al. brings up an interesting topic to research for both robotic surgery and hernia repair. The Kudsi et al. study is a single center, single surgeon study that lacks long term follow-up, but it brings to attention the fact that robotic surgery is a growing field that can reach different aspects of general surgery. While the open tension-free mesh hernia is the gold standard today, it will be interesting to see what other surgical alternatives can develop to surpass it.

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