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What is the Best Treatment for an Adult with an Umbilical Hernia?

Robert Castro and José Rodríguez
What is the best treatment for an adult with an umbilical hernia?

Evidence-Based Answer
The laparoscopic onlay patch repair is associated with less recurrence, shorter hospital stay, lower wound morbidity, and lower postoperative pain when compared with open suture repair. (SOR B, based on a single cohort study.) Open surgical mesh repair of umbilical hernia is associated with less recurrence than open suture repair, but there is controversy surrounding the infection rates associated with this repair. (SOR B, based on heterogeneous cohort studies.)

A retrospective analysis of 102 patients who underwent elective repair of umbilical hernia compared laparoscopic onlay Gore-Tex patch hernioplasty (n=26) with 3 different open repair techniques (suture herniorrhaphy [n=24], Mayo repair [n=43], and open mesh hernioplasty [n=9]). The study compared postoperative morbidity (including wound morbidity rate and length of hospital stay), postoperative pain (measured with a visual analogue scale [VAS 0–10, higher numbers=greater pain] at rest and when coughing), and operative details (including duration of operation) among the 4 groups, with a mean follow-up of 2 years (TABLE). Wound morbidity was defined as a combination of wound infections, dehiscence, and hematomas.

Laparoscopic technique was associated with longer operative time (median 66 min) than 2 of the open repair techniques (Mayo repair=60 min, suture herniorrhaphy=50 min; P<.05 for each comparison). Laparoscopic technique was also associated with less self-reported pain at rest 1 day postoperation versus the Mayo technique (average pain score 1 and 4, respectively, on the VAS; P<.05). Patients undergoing the laparoscopic technique stayed in the hospital fewer days than patients undergoing the Mayo technique (1.5 vs 3.5 days; P=.01). Laparoscopic repair was associated with lower wound morbidity when compared with the Mayo and suture techniques (0% vs 23.3% vs 20.8%, P<.05 for both comparisons). Suture herniorrhaphy had an 8.7% recurrence rate at 2 years compared with the other 3 techniques, which were all 0%. In a later retrospective analysis study, 100 patients underwent open umbilical and para-umbilical repair with mesh (n=39) or suture (n=61) and had a median follow-up of 4.5 years (range 1–8 years). Suture repair techniques included interrupted suture (n=50) or Mayo overlap (n=11); mesh repair techniques included flat mesh (n=6) and mesh plug (n=33). The recurrence rate at 4.5 years for the mesh repair groups was lower than for the suture repair groups (0% vs 11.5%; P=.007). The infection rate was also significantly lower in the mesh groups than in the suture groups (0% vs 11.5%; P=.007).

A 2008 retrospective analysis examined 152 open, elective umbilical hernia repairs using either mesh repair (n=65) or suture repair (n=87), comparing surgical site infection (SSI) recurrence rates at a major VA hospital. Recurrence rates in the mesh repair group were lower than in the suture repair group, but the difference was not statistically significant (1.5% vs 9.2%; P=.16). In this study, patients with open mesh repairs were more likely to contract a SSI than patients with open suture repairs (29% vs 13%, respectively; P=.01).

Robert Castro, BS
José E. Rodríguez, MD
Florida State University
Tallahassee, FL


**TABLE**

<table>
<thead>
<tr>
<th>Comparison of hernia repair techniques¹</th>
<th>Operative time, median (range), min</th>
<th>Resting pain score day 1</th>
<th>Coughing pain score day 1</th>
<th>Days in hospital</th>
<th>Wound morbidity</th>
<th>Recurrence rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laparoscopic onlay Gore-Tex patch hernioplasty</td>
<td>66 (55–90)</td>
<td>1</td>
<td>7</td>
<td>1.5</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Suture herniorrhaphy</td>
<td>50 (40–68)</td>
<td>NR</td>
<td>NR</td>
<td>3.0</td>
<td>20.8%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Mayo repair</td>
<td>60 (40–60)</td>
<td>4</td>
<td>6</td>
<td>3.5</td>
<td>23.3%</td>
<td>0%</td>
</tr>
<tr>
<td>Open mesh hernioplasty</td>
<td>60 (60–90)</td>
<td>NR</td>
<td>NR</td>
<td>4.0</td>
<td>11.1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Measured with a visual analogue scale (0–10, higher numbers=greater pain). NR=not reported.