Subcutaneous Only Laparoscopic Approach (SCOLA) for Mesh Repair of Umbilical Hernia with Concurrent Plication of Diastasis Recti

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BACKGROUND

• Patients presenting for evaluation of umbilical hernias are often found to have concomitant diastasis recti.
• Isolated repair of hernia defects in these patients may not provide complete symptomatic relief and may also be associated with higher risk of recurrence.
• As diastasis recti is suggestive of additional underlying weakness of the anterior abdominal wall, these patients may require additional surgical techniques to improve the likelihood successful repair.
• Traditional open repair requires large incisions with rectus sheath plication performed using an anterior approach.
• Laparoscopic techniques previously reported minimal violation of the peritoneal space with plication performed using a posterior approach.
• When performed in combination with hernia repair, prior laparoscopic techniques utilized an intraperitoneal onlay mesh (IPOM) technique.
• Prior international publications have described a prefascial mesh repair in combination with anterior plication of diastasis.
• Early results report similar outcomes with regard to recurrence, post-operative complication, and patient satisfaction.

OBJECTIVE

We present our experience with a subcutaneous onlay laparoscopic approach (SCOLA) for mesh repair of umbilical hernia with concurrent plication of diastasis recti as a minimally-invasive alternative to traditional open plication and an ergonomically favorable alternative to laparoscopic anterior plication.

RESULTS

TABLE 1. PATIENT CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (Range)</th>
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<tbody>
<tr>
<td>Mean age</td>
<td>48.8 (27-64) years</td>
</tr>
<tr>
<td>Gender</td>
<td>9 (90%) female</td>
</tr>
<tr>
<td>Mean BMI</td>
<td>30.11 (25.5-36.3) kg/m2</td>
</tr>
<tr>
<td>Mean operative time</td>
<td>158.3 (76-218) minutes</td>
</tr>
<tr>
<td>Mean defect size</td>
<td>2.2 (1.0-3.0) cm</td>
</tr>
<tr>
<td>Number of defects</td>
<td>5 (50%) with at least 2 defects</td>
</tr>
<tr>
<td>Mesh type</td>
<td>6 (60%) soft prolene; 4 (40%) ProGrip</td>
</tr>
<tr>
<td>Robotic vs laparoscopic</td>
<td>2 (20%) robotic</td>
</tr>
</tbody>
</table>

TABLE 2. POST-OPERATIVE COMPLICATIONS

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number of Patients (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seroma</td>
<td>4 (40%)</td>
</tr>
<tr>
<td>Hematoma</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Infection</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Early recurrence (&lt;6 months)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

TECHNIQUE

• Subcutaneous dissection is carried superiorly via a 3 cm suprapubic incision, continued laparoscopically via a 12 mm port and two 5 mm ports in the bilateral lower quadrants.
• Encountered hernia defects are closed primarily and plication of diastasis recti is performed using an anterior approach.
• Following plication the subcutaneous space is remeasured and mesh is sized to fit the space.
• Mesh may be fixed using suture and fibrin sealant is used for additional fixation.
• Subcutaneous drains are placed prior to closure.
• Cases were performed by three separate attendings with one attending supervising for standardized technique.

DISCUSSION

• SCOLA technique is shown to be a safe and effective approach for patients presenting with umbilical hernia associated with concomitant diastasis recti.
• Of 10 patients in our initial case series, 4 (40%) developed post-operative seroma. This may be attributable to extensive subcutaneous dissection required with our approach.
• However, there were no other post-operative complications in our short (<6 month) follow-up period, including surgical infection or early hernia recurrence.
• Additional prospective data will allow future comparison of long-term outcomes compared to more established approaches, particularly with regards to long-term recurrence rates and patient satisfaction.
• Further experience with robotics may have benefits compared to traditional laparoscopy.

REFERENCES