Single Port Laparoscopic Surgery For Patients With Complex Crohn’s Disease

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TRIPARTITE MEETING 2014
BIRMINGHAM, UK
Introduction

SPLS in Crohn’s Disease (CD):

• Favours Cosmesis (wrt extraction site required)

• Patients often slim without previous laparotomies

• Facilitates any future surgery [*Re-Op Rates 25%@10 yrs/56% @20 yrs]

• Radiologically defined “target”

• May help wound healing in debilitated patients

Methods

• Prospective, observational cohort study
• Single centre, single team experience in a tertiary centre
• All consecutive patients presenting for surgery for CD (pathologically confirmed or radiologically ascertained disease) were considered for SPLS
• 36 month period (Dec 1st 2010 to Dec 31st 2013)
• Postoperative complications categorized prospectively by Clavien-Dindo
• “Glove port” = Single Port Access Device of choice
Methods
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After surgery completed:

• Regional anaesthesia
  ✓ TAPP/Pain Buster infusor

• Enhanced recovery programme:
  ✓ NG removed at procedure end
  ✓ Mobilized 6-12 hours
  ✓ Oral intake on demand
  ✓ Urinary Catheter removed on the 1st day
Results

- Over 36 Months, 39 Patients had surgery for CD
  3 acute emergencies - laparotomy
  3 others had other complexity requiring open surgery

- Therefore 33/39 had their surgery commenced SPLS

- 5/33 converted to laparotomy after initial SPLS
  2 early (dense adhesions)
  3 after initial mobilisation to deal with fistulating disease

- 28/33 (85%) were completed laparoscopically via SPLS
  26 ileocolonic – 2 colocolonic
  4 of these required extension of wound simply to allow extraction of a bulky specimen
## Results

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total No (n=33)</th>
<th>No. Completed by Single Port Laparoscopic Access</th>
<th>Single Port Laparoscopic Completion Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urgent operation</td>
<td>15</td>
<td>15</td>
<td>100%</td>
</tr>
<tr>
<td>Previous abdominal surgery</td>
<td>8</td>
<td>6</td>
<td>75%</td>
</tr>
<tr>
<td>Recurrent disease</td>
<td>6</td>
<td>4</td>
<td>67%</td>
</tr>
<tr>
<td>Obstruction</td>
<td>7</td>
<td>4</td>
<td>57%</td>
</tr>
<tr>
<td>Abdominal mass</td>
<td>6</td>
<td>5</td>
<td>83%</td>
</tr>
<tr>
<td>Fistula</td>
<td>6</td>
<td>4</td>
<td>67%</td>
</tr>
<tr>
<td>Abscess</td>
<td>4</td>
<td>3</td>
<td>75%</td>
</tr>
<tr>
<td>Characteristic</td>
<td>Cohort overall (n=33)</td>
<td>Ileocolonic Disease (n=31)</td>
<td>Colonic disease (n=2)</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------</td>
<td>----------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Mean Age (Range) in years</td>
<td>31</td>
<td>(17-69)</td>
<td>30</td>
</tr>
<tr>
<td>Mean BMI (range) in kg/m²</td>
<td>21.3</td>
<td>(18.6-28.0)</td>
<td>21.8</td>
</tr>
<tr>
<td>Urgent Procedure</td>
<td>15</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Conversion rate (%)</td>
<td>5/33 (15%)</td>
<td>5/31 (16%)</td>
<td>0/2</td>
</tr>
<tr>
<td>Wound extension rate (%)</td>
<td>4/33 (12%)</td>
<td>4/31 (13%)</td>
<td>0/2</td>
</tr>
<tr>
<td>Mean Operative Time (range) in mins</td>
<td>120</td>
<td>(80-200)</td>
<td>155</td>
</tr>
<tr>
<td>Median postop day of discharge (range)</td>
<td>6 (3-33)</td>
<td>6 (3-33)</td>
<td>5 (5-5)</td>
</tr>
<tr>
<td>Median resection specimen length (range) in mm</td>
<td>280 (120-1005)</td>
<td>280 (120-1005)</td>
<td>310 (230-380)</td>
</tr>
<tr>
<td>Microscopic margin involvement (%)</td>
<td>6 (18%)</td>
<td>5 (16%)</td>
<td>1 (50%)</td>
</tr>
<tr>
<td>Complication by Clavian Dindo Classification</td>
<td>13</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>I</td>
<td>8</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>III(a)</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>
Complications:

- No deaths, no leaks, no re-operation or ICU admission
- 13 Clavian Dindo Complications, 3 type III.
  
  *One postop bleed from duodenal ulcer*
  
  *Two radiological drainage of intra-abdominal collection*

- One readmission (C diff colitis)

- F/U 21 months: no late wound herniation
Results

- Glove port performed well

- Stable, robust, always available, fits all body shapes
  - Better – elasticity – mobile fulcrum helps triangulation and maneuverability
  - No compromise to mobilization, dissection or anastomosis

- Economically:
  Access Cost= 65 Euro (wound protector+glove+trocars)
  Cheaper than equivalent commercial device
  & also multiport approach) (No obturators!)
Summary

• SPLS is a further step advance in minimal access
• Especially applicable to patients with CD
• One incision – cosmetic, sole site for regional anaesthesia
• SPLS completion (no extra port site) in the majority of cases although incision may need elongation for specimen extraction
• Avoids morbidity with 5mm and 12 mm obturators and eliminates off-midline incisions
• In others, conversion to laparotomy facilitated (“minilaparotomy ab initio”)
Conclusion

- Single largest sequential cohort experience focused solely on patients with CD
- The majority can be concluded by SPLS alone
- May also reduce adhesion rates and facilitate future surgical requirements
- Especially likely to be viewed favourably by patients where cosmesis is a priority