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Port-exteriorization appendectomy (PEA): a preliminary report

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Abstract Between 1994 and 1999, 121 patients with the clinical diagnosis of acute appendicitis were operated upon at our institute, 70 by conventional appendectomy and 51 by laparoscopic procedures. There were no significant differences in the demographic data, but the percentage of complicated appendicitis operated upon laparoscopically (47%) was higher than in those operated upon conventionally (35.6%). In 13 children a new laparoscopy-assisted technique was used, which entails exteriorization of the inflamed appendix via a right-iliac-fossa port and a complete appendectomy outside the abdominal cavity. The new technique proved to be useful in all types of appendiceal pathology; there were shorter operative times and hospital stays and it avoids the drawbacks associated with operating in complicated appendicitis.

Keywords Laparoscopic-assisted appendectomy · Appendicitis

Introduction

Laparoscopic appendectomy (LA) in children is of unquestionable diagnostic interest, has better cosmetic results, and a shorter hospital stay. The benefits are greatest in complicated cases, but these benefits are offset by higher complication rate and longer operation time [1].

In this preliminary report we discuss a new laparoscopy assisted technique that entails exteriorization of the inflamed appendix via a 5–10 mm port, which is directly inserted over its anatomical location, and a complete appendectomy outside the abdominal cavity.

This technique has proven to be simple, swift, safe and so far has avoided the potential complications associated with complicated appendicitis.

Materials and methods

Between January 1994 and October 1999, 121 children aged 3–13 years (mean 8.9 years) were operated upon for clinically-diagnosed acute appendicitis. There were 85 males and 36 females; in 70 the conventional open technique was used and in 51 laparoscopic procedures. There were no differences in age and sex between the two groups, however, the percentage of complicated appendicitis was higher in children operated upon laparoscopically. Two histologically-normal appendices were encountered in the conventional

Table 1 Histopathology of removed appendices

<table>
<thead>
<tr>
<th>Histology</th>
<th>Conventional</th>
<th>Laparoscopic</th>
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</thead>
<tbody>
<tr>
<td>Complicated</td>
<td>25 (36%)</td>
<td>24 (47%)</td>
</tr>
<tr>
<td>Suppurative</td>
<td>13 (19%)</td>
<td>7 (14%)</td>
</tr>
<tr>
<td>Acute</td>
<td>26 (37%)</td>
<td>15 (29%)</td>
</tr>
<tr>
<td>Early</td>
<td>4 (6%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>Normal</td>
<td>2 (3%)</td>
<td>1* (2%)</td>
</tr>
</tbody>
</table>

*Twisted ovarian cyst

Fig. 1 Sites of ports
Fig. 2 Grasping the appendix
Fig. 3 Pulling appendix via right-iliac-fossa port
Fig. 4 Appendectomy outside abdominal cavity
Fig. 5 Replacing cecum into abdomen

group (3%) and a twisted ovarian cyst was found to be the cause of 1 acute abdomen in the laparoscopic group (2%) (Table 1).

Eleven procedures (22%) in the laparoscopic group were converted to open surgery. This occurred during the early phase of this series due to the presence of complicated appendicitis in 9 and