Visceral Mobilization / Massage for Postoperative Adhesions and Ileus

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BACKGROUND Abdominal and pelvic surgery invariably leads to the development of adhesions between organs and between organs and the abdominal wall. Intraperitoneal adhesions are a leading cause of small bowel obstruction, infertility, and non-specific pelvic and abdominal pain. The same surgeries that cause adhesions also induce postoperative ileus (reduction or cessation of normal intestinal propulsion). A method that could treat or prevent the formation of adhesions, and augments ileus, could lead to fewer postoperative complications as well as decreased immediate and long-term costs (shorter hospital stays and fewer reoperations, respectively).

APPROACH A series of experiments were designed to determine if a practitioner experienced in visceral palpation and treatment could detect, disrupt, and prevent the recurrence of postsurgical adhesions in a common rat model. Rats were subjected to cecal abrasion, which leads to postoperative adhesions (Fig. 1). Treatments were performed on established adhesions in one group of rats, and performed immediately following surgery as a preventive measure in a separate group of rats. In a separate series of experiments, also using rats, we determined whether massage immediately following surgery reduced ileus. The small intestine was exposed and palpated to emulate “running of the bowel” by rolling the intestine between the fingers, inducing a robust ileus. Eight treatments were performed over the first 12 hours, and data were collected after 24 hours.

RESULTS Our therapist could detect and disrupt most experimental adhesions. Moreover, visceral manipulation performed immediately following surgery led to a lower rate of adhesion formation (Table). Treatments performed on rats with ileus led to increased small intestine transit as well as increased fecal pellet output (Fig. 2). More interestingly, the treatment also led to reductions in measures of intraperitoneal inflammation, such as decreased total intraperitoneal protein and immune cells (Fig. 3).

CONCLUSIONS These data support that abdominal massage / manipulation can reduce postoperative adhesions and ileus in these rat models. Human clinical trials could be designed to determine if similar responses and benefits could be realized following abdominal surgeries.

### Table

<table>
<thead>
<tr>
<th>Group</th>
<th>Severity</th>
<th>Adhered</th>
<th>Total</th>
<th>Cec - Cec</th>
<th>Cec - Abd</th>
<th>Cec - Fat</th>
<th>Fat - Abd</th>
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<tbody>
<tr>
<td>Control</td>
<td>1.4 (1.35)</td>
<td>7 / 10</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>1</td>
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<tr>
<td>Lysis</td>
<td>1.9 (1.84)</td>
<td>7 / 10</td>
<td>9 (6)</td>
<td>2 (2)</td>
<td>1 (4)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Preventive</td>
<td>0.6 (0.97)*</td>
<td>3 / 10</td>
<td>3** (4)</td>
<td>1 (1)</td>
<td>0 (3)</td>
<td>2</td>
<td>0</td>
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*Abd = abdomen

**Cec = cecum

**Figure 1.** Adhesion before (A) and after (B) manual lysis.

**Figure 2.** Small intestine transit (A) and fecal pellet output (B) are increased by treatment.

- NORM = normal rats
- NST = no surgery, treatment
- NSNT = no surgery, no treatment
- ST = surgery, treatment
- SNT = surgery, no treatment

**Figure 3.** Intraperitoneal fluid inflammatory cells (A) and total protein (B) were decreased by treatment.