Review: routine NG decompression after abdominal surgery delays return of bowel function and increases pulmonary complications

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Review: routine NG decompression after abdominal surgery delays return of bowel function and increases pulmonary complications

**QUESTION**

Is routine nasogastric (NG) tube decompression after major abdominal surgery better than selective or no decompression?

**METHODS**

**Data sources**: MEDLINE, EMBASE/Excerpta Medica, and Cochrane Central Register of Controlled Trials (all to 2006); and reference lists of published studies and reviews.

**Study selection and assessment**: randomised controlled trials (RCTs) that compared routine NG tube decompression with selective or no tube use (control) in patients >18 years of age having abdominal surgery. In the routine decompression group, tubes were inserted before or during surgery and kept in place after surgery until spontaneous passage of flatus. In the control group, tubes were not used or were inserted during surgery and removed in the operating room or ≤24 hours after surgery. Studies involving laparoscopic surgery, gastrostomy tubes, tubes inserted through the abdominal wall, or long tubes used for bowel obstruction were excluded. 33 RCTs (n = 5240) met the selection criteria.

**Outcomes**: time to first flatus and pulmonary complications (composite of atelectasis and pneumonia). Secondary outcomes included wound infection, anastomotic leak, nausea or vomiting, length of hospital stay, and adverse events related to tube insertion.

**MAIN RESULTS**

Meta-analysis showed that routine use of NG tubes after abdominal surgery delayed time to flatus, increased pulmonary complications and length of hospital stay, but reduced vomiting; groups did not differ for other outcomes (table). No adverse events related to tube insertion were reported.

**CONCLUSION**

Routine use of nasogastric tube decompression after major abdominal surgery delays time to flatus, increases pulmonary complications and length of hospital stay, but reduces vomiting more than selective or no tube use.

**ABSTRACTED FROM**


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**Routine nasogastric tube decompression v selective decompression or no tube use (control) after abdominal surgery in adults**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Number of trials (n)</th>
<th>Weighted event rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Routine decompression</td>
<td>Control</td>
</tr>
<tr>
<td>Pulmonary complications</td>
<td>24 (3937)</td>
<td>9.0%</td>
</tr>
<tr>
<td>Anastomotic leak</td>
<td>13 (2113)</td>
<td>2.6%</td>
</tr>
<tr>
<td>Vomiting</td>
<td>19 (3341)</td>
<td>11%</td>
</tr>
<tr>
<td>Wound infection</td>
<td>18 (3573)</td>
<td>4.5%</td>
</tr>
<tr>
<td><strong>Time to flatus (d)</strong></td>
<td>21 (3705)</td>
<td><strong>0.35 (0.16 to 0.53)</strong></td>
</tr>
<tr>
<td><strong>Length of hospital stay (d)</strong></td>
<td>12 (1758)</td>
<td><strong>1.21 (0.56 to 1.86)</strong></td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary. RRR, RRI, NNT, NNH, and CI calculated from data in article based on a random-effects model and number of trials reporting n/group. †Based on 11 trials with events >0. ‡Favours control group; significant heterogeneity among trials. §Weighted mean difference for 21 trials recalculated from data in article.

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**COMMENTARY**

Nasogastric decompression after abdominal surgery—the elimination of gas and gastrointestinal (GI) secretions—became accepted practice in the 1930s and was thought to hasten return of GI function and decrease postoperative complications. However, increasing evidence suggests that routine use of NG decompression does not speed recovery of GI function and may increase pulmonary complications.\(^1\)\(^2\) The review by Nelson et al confirms previous findings and strengthens the evidence against routine NG decompression.

Although the review included 33 RCTs, it had some limitations, such as the inclusion of generally poor quality RCTs. Other notable limitations were the subjective nature of the primary endpoint (time to first flatus) and variation in data reported for this outcome. Although traditionally used as a measure of GI function, this measure lacks precision. Nelson et al used imputation techniques where limited data for time to first flatus were reported in individual trials; however, there was significant heterogeneity in the resulting meta-analysis for this outcome.

This systematic review provides additional evidence for nurses that routine NG decompression exposes patients to unnecessary risks of pulmonary complications and discomfort, without conferring an advantage. In contrast, selective decompression should be reserved for patients with nausea, vomiting, and abdominal distension after surgery. Nurses need to advocate for selective use of NG decompression for their patients and collaborate with members of the healthcare team to implement evidence-based protocols and practice.

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