Routine contrast radiology after oesophagectomy and total gastrectomy

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INTRODUCTION

- High morbidity and mortality associated with anastomotic leaks
- 50% mortality with leaks
- No role for routine contrast swallow following gastrectomy (Lamb et al)
- Still widely practiced in the UK
- CT scan at 7 day improves sensitivity and negative predictive value for diagnosing anastomotic leak (Upponi et al)
AIMS

• Assessing and comparing the use of selective contrast radiography after surgery with routine tests:

1. Detection of anastomotic leaks

2. Performance of routine radiography

3. Clinical outcome
METHODS

- Retrospective study
- Total gastrectomy and subtotal oesophagectomy for malignancy
- January 2006 to January 2012 (n=270)
- Contrast radiography performed according to surgeon’s preferences
- Non-ionic contrast, no barium
PATIENT GROUPS

• Routine contrast swallow (RS)

• Selective contrast swallow (SS)
  depending on clinical progression
RESULTS

Total number
n = 270

Routine
n = 184

Selective
n = 86
# PATIENT DEMOGRAPHICS

<table>
<thead>
<tr>
<th></th>
<th>RS n=184</th>
<th>SS n=86</th>
<th>( p ) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>64</td>
<td>63</td>
<td>ns</td>
</tr>
<tr>
<td>M:F</td>
<td>3:1</td>
<td>3.2:1</td>
<td>ns</td>
</tr>
<tr>
<td>Day of swallow</td>
<td>5 (2-11)</td>
<td>10 (6-34)</td>
<td>ns</td>
</tr>
<tr>
<td>Oesophagectomy</td>
<td>143</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Total Gastrectomy</td>
<td>41</td>
<td>41</td>
<td></td>
</tr>
</tbody>
</table>
RESULTS OF ROUTINE CONTRAST RADIOLOGY

RS
n = 184

n=176

Leak
n = 10

No leak
n = 166

Clinical leak
n = 6

Leak
n = 6
# PERFORMANCE OF ROUTINE RADIOLOGY

- **Sensitivity**: 40%
- **Specificity**: 96%
- **Positive predictive value**: 60%
- **Negative predictive value**: 97%
RESULTS OF SELECTIVE RADIOLOGY

SS
n = 86

Swallow
n = 21

Leak
n = 0

No swallow
n = 35

Clinical Leak
n = 1

Clinical Leak
n = 1

SS
n = 86

Swallow
n = 21

Leak
n = 0

No swallow
n = 35
### CLINICAL OUTCOMES

<table>
<thead>
<tr>
<th></th>
<th>RS n=184</th>
<th>SS n=86</th>
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</thead>
<tbody>
<tr>
<td>Post-operative stay</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>Anastomotic leak rate</td>
<td>6.7%</td>
<td>1.1%</td>
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<tr>
<td>In hospital mortality</td>
<td>1.6%</td>
<td>4.7%</td>
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</table>

**MORTALITY 2.6%**  
**LEAKS 4.8%**
CONCLUSION

• Leak rate following total gastrectomy and sub-total oesophagectomy is low
  • Total gastrectomy – 7%
  • Oesophagectomy – 4%

• Mortality following resection for upper gastrointestinal malignancy is 2.6%

• Contrast swallows performed in the early post operative period to exclude a mechanical problem do not exclude a subsequent ischaemic breakdown
REFERENCES


3. Boone et al. Diagnostic value of routine aqueuous contrast swallow examination after oesophagectomy for detecting leakage of the cervical oesophagogastric anastomosis. ANZ J Surg, 2008 Sep; 78(9); 784-90