Endograft infection after endovascular aneurysm repair: A systematic review and meta-analysis

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Endograft Infection Post EVAR

- Rare but potentially lethal complication after EVAR
- Represents both diagnostic and therapeutic challenge

- The incidence difficult to estimate: most data derive from single-centre studies (0.2%-8%)
- Graft explantation gold-standard approach, non-operative management or “bridging” therapy for patients with a high surgical risk
Overview

**Purpose:** To undertake a systematic literature review upon the management and outcomes of aortic endograft infection after endovascular aneurysm repair (EVAR)

**Method:** Studies reporting cases of endograft infection after EVAR. Performed a meta-analysis on 30-day/in-hospital mortality and follow-up mortality using the random-effects model.
Results

Sixteen articles reporting a total of 329 patients

- Incidence of endograft infection 0.6% (95% CI 0.4 to 0.8)
- The time from implantation to diagnosis ranged from 1-128 months (mean, 26 months)
- Less than half of the patients in our cohort (40%) had emergency surgery; the rest underwent an urgent or elective.
<table>
<thead>
<tr>
<th>Presentation</th>
<th>%</th>
<th>Confidence Intervals (95%)</th>
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</thead>
<tbody>
<tr>
<td>Pain, fever, and leukocytosis</td>
<td>70%</td>
<td>67 - 72</td>
</tr>
<tr>
<td>Weight loss/ fatigue or generalized weakness</td>
<td>30%</td>
<td>27 - 32</td>
</tr>
<tr>
<td>Infection/abscess</td>
<td>20%</td>
<td>18 - 22</td>
</tr>
<tr>
<td>Bleeding complication</td>
<td>10%</td>
<td>7 - 12</td>
</tr>
<tr>
<td>Asymptomatic</td>
<td>10%</td>
<td>7 - 12</td>
</tr>
</tbody>
</table>
Management of Endograft Infection

- Surgical explantation of the Endograft: 1%
- Endovascular Treatment: 4%
- Conservative Treatment: 95%

Number (N= 329)
- 312: Surgical explantation of the Endograft
- 2: Endovascular Treatment
- 13: Conservative Treatment
Analysis of Outcome

- Surgical explantation of the Endograft:
  - 30 day Mortality: 25%
  - Overall Mortality: 45%

- Endovascular treatment:
  - 30 day Mortality: 50%
  - Overall Mortality: 50%

- Conservative treatment:
  - 30 day Mortality: 58%
  - Overall Mortality: 63%
Conclusions

- Insufficient low quality evidence on the management and outcomes of stent graft infection after EVAR
- A high index of suspicion is required for the early detection and diagnosis of endograft infection
- Surgical treatment with complete explantation of the infected endograft seems to be the optimal management in selected patients
Conclusions

- Supportive medical treatment without surgical intervention has a significant associated mortality.

- Further research from national and international registries and prospective multi-centre studies is required to define the role and outcomes of specific surgical treatments and predictive factors of outcomes in the management stent graft infection after EVAR.