Reviewer's report

Title: Fully covered self-expandable metal stents (SEMS), partially covered SEMS and self-expandable plastic stents for the treatment of benign esophageal ruptures and anastomotic leaks

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Reviewer: Bas P Wijnhoven

Reviewer's report:

The study by van Boeckel et al. reports on the outcome of a series of stent placements for benign oesophageal injuries or anastomotic leaks. Clinical success was judged to be 76% without differences between three groups of stents used.

1. The study is well written, clear and concise. The authors are all from well-respected GI units. However, the inherent methodological problems with this study as well as many other case series are numerous:

   retrospective analysis
   three centers involved (2 from the Netherlands and one from the USA)
   very different etiologies of esophageal injury-rupture
   timing between onset of injury and treatment-stent placement unknown
   no information on the number of patients with similar esophageal ruptures and leaks who did not undergo stent placement in the three centers during the study period (what is the denominator for the study period??)

   hence, highly selective indications for stent placement in these patients that remain obscure for the reader

   comparison with surgical series impossible due to lack of information on grade, severity and extent of contamination, size of rupture, location of rupture etc. etc.

2. The comparison of the efficacy of three different stent types is not valid. There were no differences between the three stent types but the indication and reasons to prefer one above the other in this series is unclear. Moreover the number of patients per group is small. Given the heterogeneous patient population and underlying disorders in the groups no comment or conclusion whatsoever can be made.

3. The authors indeed make a valid comment on the importance of adequate drainage of sepsis at and around the site of oesophageal injury. This is the most important aspect of treatment of esophageal rupture and anastomotic leaks. The questions still remains if stent placement at all truly does aid or on the (spontaneous) healing of oesophageal leaks. Several surgical approaches with T-tube placement with surgical drainage or external drainage alone is successful have been published. Does a stent truly favourably alter the course of the
disease? That is the question that has not been answered so far. Therefore the efficacy of stent placement in healing benign esophageal leaks and perforations can not really be commented on.

4. Can the authors comment on the time between onset of oesophageal trauma/rupture and stent placement? This is an important determinant of succes with surgery as well as stent placement. The same is true for the extent of collateral damage/contamination of the mediastinum-pleural cavity. In line with other reports that stent placement in the acute setting directly after occurrence of oesophageal rupture is succesful because of less contamination. E.g. 9 patients had a rupture after pneumatic dilatation that likely was diagnosed at the time of the endoscopic treatment. These patients likely benefited from a stent. Whereas the patients with Boerhaave syndrome (n=4) likely were diagnosed at a later stage (12-24 hrs??). Hence stent placement might have been less effective. Can the authors give details on the success rate for the different underlying pathofysiology/diseases? This is crucial for interpretation of the results.

The conclusion of the study that covered stents are effective and safe should be weakened and more in balance with the reported complications. The safety with two ruptures upon removal of the stent, two patients with bleeding including one stent reated death should not be forgotten about. Furthermore, stent migration remains a big problem, as shown in this study. Lastly, one patient needed an operation to remove the stent.

6. The chosen (primary) endpoint of the study was sealing of rupture or leak confirmed by endoscopy. This can since the accuracy of endoscopy to determine complete sealing is by far not 100%. Ideally, a combination of an esophagogram/CT with oral contrast and endoscopy would probably have been better.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.