Reviewer's report

Title: A new cable-tie based sternal closure system: Description of the device, technique of implantation and first clinical evaluation

Version: 1 Date: 15 January 2012

Reviewer: Evelio Rodriguez

Reviewer's report:

The authors present their experience with a new sternal closure device (The Sternal ZipFix™ System) based on the cable-tie principle. A total of 50 patients were studied and 44 patients were considered high risk for sternal dehiscence. At 30 days none of the patients demonstrated sternal instability. Two patients developed mediastinitis requiring device removal; however, the cables were intact and the sternum remained stable. The authors concluded that the Sternal ZipFix™ System could be used safely and effectively.

I would like the authors to address a few points:

Major Compulsory Revisions:

1) In your abstract you mention that 44 patients were considered high-risk for dehiscence. What was the reason(s)?
2) How many surgeons performed the procedures?
3) What is your institutional antibiotic policy for cardiac surgical patients?
4) When were the infections diagnosed in both patients with mediastinitis? Did they receive antibiotics for a while prior to going back to surgery?
5) Do you know the organisms causing the infections?
6) Day 24 and 30 appear to be late for infection. Do you believe that the cables got contaminated during surgery and then were responsible for a late infection?
7) We have use a similar cable system in the past and experience an increased in sternal infections and in addition we have seen patients 1 and 2 years later with the cables loosing-up requiring cable removal. Some of these patients demonstrated sternal malunion. Have you seen similar cases? How long out is your first patient?
8) What was the rate of mediastinitis at your institution during the study period for patients having their sternum closed in conventional fashion?
9) What is the cost of this device and how does it compare to plain stainless steel wires?

Minor Revisions:

1) Please review manuscript for a few typos.
Discretionary Revisions:

1) Could shorten the overall paper as the technology and surgical descriptions are quite long?

The authors should be congratulated for a nice study. Addressing the points above will significantly improve the manuscript.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests