Author’s response to reviews

Title: Sternal reconstruction after poststernotomy mediastinitis

Authors:

Pankaj Kaul (pankajkaul784@btinternet.com; pankajkaul705@gmail.com)

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Author’s response to reviews:

Reviewer #1:

Dear Author

Your manuscript is a traditional review of literature aiming to provide a broad overview of sternal wound reconstruction after mediastinitis; however, all topics are interpreted unsystematically with subjective summaries of findings of previous publications. There is no clear methodological approach and evidence-based criteria for selecting papers that were used to compose it.

Sincerely,

Reviewer

My response:

Dear Reviewer

Thank you for your comments.

A literature search was done using Healthcare Databases Advance Search comprising in particular PubMed and Medline databases up to June 2017 using MeSH headings: Sternal Wound Infections, Sternal Dehiscence, Sternal Reconstruction, Latissimus Dorsi Flaps, Omental Flaps, Rectus Abdominis Flaps, Pectoral Flaps, Negative Pressure Wound Therapy.

This review comprises summaries of landmark papers describing in particular the plastic reconstructive techniques. Whilst it would not be possible to mention all papers, the author has
prioritised the various publications by their content, size of the sample, originality, impact and peer-citations.

I have now added a Methodology section to describe the search strategy.

Reviewer #2:

This is an excellent review. I would like to have some information on a few subjects: 1- the role of skeletonized ITA as opposed to pedicled ITA for prevention of sternal wound infection in diabetics; 2-the use of gentamycin or vancomycin topical antibiotics during surgery

It would be good if you could have referred the excellent paper by Lazar et al: "Prevention and management of sternal wound infection. Expert consensus review. (J Thorac Cardiovasc Surg 2016; 152Ç:962-972). This paper represents an expert consensus of the AATS

My response:

Dear Reviewer

Thank you for your kind comments and helpful suggestions.

I have now provided information on the role of skeletonised ITA as opposed to pedicled ITA with special context in diabetics in preventing sternal wound infections. I have also discussed the role of topical Gentamycin and Vancomycin during surgery. This has been done on the highlighted text on page 8, lines 11-25. I have also quoted extensively the excellent paper by Lazar that you mentioned on page 9, lines 10-27 and page 10, lines 1-3.

Reviewer #3: Kaul has submitted a review article regarding therapeutic options in patients with sternal complications/infections after cardiac surgery.

The manuscript focuses on plastic surgery procedures to overcome this devastating complication.

Unfortunately the author only enumerates and briefly summarizes the existing literature, but the synopsis is missing. It is most important for the reader, to learn what one has to do in certain situations: is a latissimus dorsi flap, a pectoralis major flap, an omental graft or the combination of the described options the adequate approach? Is always a plastic surgeon needed?

Furthermore:
I doubt the numbers and I would disagree to say DSI is an uncommon complication. The STS guidelines (Ann Thorac Srg, 2006; 81:397-404) estimate a prevalence of 0.25-4% of DSI and not a mere 0.8 -1.5% as the author mentions. Maybe this is due to the fact, that addressed references are frequently outdated (here: 1984 and 1976). There is plenty of recent literature available

- Prophylactic antibiotic administration is said to be administered before skin incision and skin closure. According to the STS guidelines (see above) antibiotics are said to be given up to 48h after surgery. Please specify.

- Please add to list of abbreviations: SSD; WBC, CRP, NPWT, VAC or have all abbreviations mentioned in the text.

- Please add titanium sternal plating method especially in conjunction with vacuum therapy for stabilizing sterna after infection. This technique is also potentially beneficial.

My response:

Many thanks for your painstaking analysis.

I have added a synopsis and a set of recommended and commonly followed guidelines in the highlighted text on pages 11-13 regarding the general treatment and reconstructive procedures to follow under different sets of challenges.

I have added a new section under the heading “Need for a Plastic Surgeon” on pages 28-30.

I have updated the figures for prevalence of sternal wound infections in the highlighted text on page and removed some old references and incorporated new ones (ref 4). The sternal wound infection rate quoted in STS paper is itself, however, based on old references.

I have updated the antibiotic duration based on 2nd half-life on page 8, 1st para, line 8 and upto 48 hours on page9, line 12 in the highlighted text on page although this is not followed universally.

I have added the relevant abbreviations in the highlighted text on page 32 and added the titanium plating as a method for stabilising sternum on page 7, lines 7 and 8 on the highlighted text.
Dear Editor

In addition to the above changes in response to the reviewers, I have had to add some explanatory text on NPWT on pages 13 and 14 in the highlighted text and on Microbiology in the highlighted text on page 11.

Best wishes
Pankaj Kaul

07/10/2017

Dear Editor

In this latest version, I have made the requested changes in the abstract.

Best wishes
Pankaj Kaul