

Implant removal in surgical site infection after posterior stabilization of the spine: When do we have to?

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Introduction

Surgical site infections (SSI) after posterior stabilization of the spine (PS) are usually treated by implant removal and optional reinstrumentation if loosening of one or more screws is perceived.

There is presently no conclusive data that shows the success rate of the treatment of SSI after PS without implant removal when no radiological signs of screw loosening (RSL) are perceived.

If the success rate was very low, hospital stay and number of operations could be significantly lower if an early implant removal would be performed. However, if implant removal would not be necessary, the spine would remain stabilized and the patients would be spared a more invasive procedure.

The primary objective of this investigation was to analyze if treatment of SSI after PS without RSL shows a sufficient success rate without implant removal.

Methods

All patients who were treated for a SSI after PS without RSL in a single spine center from 12/2009 to 03/2020 were enrolled in a retrospective analysis. Type of treatment, demographic and clinical data were recorded.

All patients were initially treated by revision surgery with debridement and irrigation and subsequent antibiotic therapy. Implant removal was performed if the initial treatment did not lead to normalization of soft tissue and laboratory tests (with regard to infection).

Statistical analysis was performed by SPSS 25. Descriptive data are given as mean and standard error of mean, a chi square test was performed.

Results

Of the 32 enrolled patients, 15 had an early SSI (<6 weeks after surgery), 17 a late SSI (≥ 6 weeks).

In 71.9% (23/32) the SSI was treated without implant removal: 10/15 in early SSI, 13/17 in late SSI. The difference was not significant ($p>0.05$).

One patient died, all other patients were discharged from the hospital with no more laboratory signs of the infection and with closed soft tissues.

Hospital stay was 35.3 days (4.9). Patients were operated 2.9 times (0.7) during the hospital stay.

Conclusion

In our group of patients the success rate of irrigation and debridement without implant removal showed a success rate of 71.9%.

In the light of this data, performing at least 2 irrigations and debridements prior to implant removal seems to be a valid treatment option in SSI after PS if there are RSL.

Disclosures

Conflicts of Interest and Source of Funding

We did not receive any funding from any source for this study.

The authors state that there is no conflict of interest with regard to the presented study.

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