Transcutaneous compression suture with iodine gauze for the treatment of chronic, fistulizing wounds in periprosthetic shoulder infections

Florian Grubhofer[1], Evan O'Donnell, Lukas Ernstbrunner[2], Bettina Hochreiter, Karl Wieser[3]
[1]University Hospital Balgrist, [2]Balgrist University Hospital, University of Zurich, [3]Balgrist University Hospital

INTRODUCTION:
Periprosthetic and implant associated shoulder infections in polymorbid patients often result in multiple surgeries, which affect soft tissue negatively. Wound closure is a basic requirement for infection control and is particularly challenging in multimorbid patients with compromised soft tissues. This study describes a so-called compression suture technique, in which a gauze soaked in iodine is used to apply compression to the wound area and simultaneously disinfect the wound area.
METHODS:
A retrospective cohort study of nine consecutive patients was performed. In all patients, prior debridement including antibiotic loaded spacer implantation failed to achieve infection control. All nine patients were treated with the a so-called "iodine-gauze-compression-suture" wound closure after removal of the arthroplasty, radical debridement, implantation of an antibiotic loaded cement spacer with postoperative antibiotic therapy. The primary endpoint was defined as infection control, and the secondary endpoint was defined as surgery revision rate. Patient-reported outcomes were collected as the third outcome.
RESULTS:
The mean age of patients was 71±10 years, the patients had a mean of 5 ±2,3 previous surgeries before the index surgery was performed. The mean ASA score was 3,3±0,8. Nine out of nine patients (100%) showed infection control and nine out of nine (100%) patients did not need revision surgery after a mean follow up of 14±2 months. Mean Subjective Shoulder Value was 45±9%, patient satisfaction was very good in 2, good in 5, moderate in 2 patients. The main reason for the high satisfaction rate despite poor function was the achievement of infection control in the absence of pain.

DISCUSSION AND CONCLUSION:
Iodine gauze compression suture was used to achieve successful infection control without additional revision surgery in 9 of 9 polymorbid patients who previously underwent unsuccessful surgery with failed infection control. The described new wound closure method is safe and leads to reliable wound closure and infection control in multiple pre-operated patients with fragile wound conditions.