

Usage of Disposable Negative Pressure device for tissue reparation in Orthopedy

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Introduction

Today, thanks to the continuous improvement of surgical techniques, to the characteristics of implants and to our experience, we can inscribe the hip's primary implant replacement between the successes of modern orthopedic surgery. However, if one of the prosthetic components shifts, such as in osteolysis, infection or fracture we are forced to perform a orthoplastic review. The revision surgery involves a longer and more difficult surgery with a lower probability of favorable outcome.

Objectives

We wanted to observe if the use of the new NPWT device PICO (Smith & Nephew) would allow 3 patients, designed for a prosthesis revision – with already suffering tissues – a better control of edema, blood/serum subcutaneous collection and a better patient compliance.

Methods

Using a survey data sheet and digital photos documenting various times, we have studied 3 patients who had characteristics, apt to test this new NPWT device:

- Patient 1 (65, f) – underwent a left hip replacement in 2009, revised in July 2011, with a long clinical history: removal of infected left hip prosthesis in 1995 , removal of the femoral head in 1996, right knee and left forefoot amputation in 2007. Problems related to the healing of surgical wound (Fig. 1, 2, 3)
- Patient 2 (40, m) – hypertensive, bilateral reactive arthritis at coxofemoral joint since the age of 10, underwent surgery for cleaning and removal of hip prosthesis. (Fig. 4, 5, 6)
- Patient 3 (33, m) with mitral valve prolapse, operated for necrosis of the left femoral head (Fig. 7, 8, 9)



Fig. 1 – Post- operative appearance

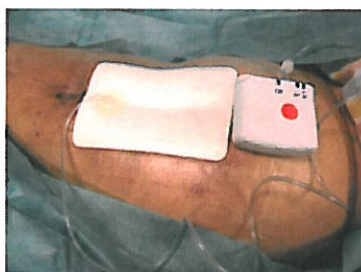


Fig. 2 – 2nd day after PICO application



Fig. 3 – Appearance of PICO on the 7th day, prior to removal. Note the optimal control of exudate and the absence of perilesional edema



Fig. 4 - Post-operative appearance



Fig. 5 – 7th day check. Optimal retention of secretions



Fig. 6 – Removal of PICO on 7th day. Note the difference between the skin subject to NWPT and the one that is not.



Fig. 7 - Appearance of the wound on day 2



Fig. 8 – PICO on site



Fig. 9 - Appearance of the wound on day 7, upon removal

Conclusions: using the new NPWT device, PICO (Smith & Nephew), in the few cases treated has been effective, decisive and well accepted by patients. Of course we are not able to definitively state an indication, but the peculiarity of the instrument, easy handling and well tolerated by the patients, has raised our attention. We are now ready for a study, not only referred the revision of hip replacement, which in the near future could make it possible to define alternative methods in managing complications of orthopedic injuries.