

USE OF NEGATIVE PRESSURE WOUND THERAPY IN PROSTHETIC JOINT INFECTION: CASE REPORT

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Introduction Prosthetic joint infections (PJIs) are devastating complications after total joint arthroplasty, which lead to increased morbidity and mortality. Treatment options for PJIs include medical management as well as surgical treatment with irrigation and debridement (I&D) and 1-stage or 2-stage exchange arthroplasty¹. There are 3 main types of postoperative surgical site infection (SSI) after total hip arthroplasty (THA): acute postoperative (early onset), appearing within 3 months postoperatively; delayed deep, appearing 3 to 12 months postoperatively; and late hematogenous, appearing more than 1 year postoperatively. Skin-concomitant bacteria, in particular *Staphylococcus aureus*, were the most typical isolates in cases of both early and late infection². PJIs due to gram-negative pathogens, although less common, is difficult to treat and is associated with limited success³.

Methods A 59 years-old man affected by obesity, high blood pressure and diabetes mellitus, went to the emergency room of our hospital for very strong pain in the left hip associated to functional limitation for 3 days without trauma. The patient had undergone surgery for total left hip joint replacement a few years earlier. Following orthopedic evaluation and execution of X-ray and ultrasound of the left hip PJI was diagnosed and then he was admitted to orthopedic department. During hospitalization, despite the initial broad-spectrum antibiotic therapy, the patient developed rise in temperature and elevation of inflammatory markers and then blood cultures and a CT of the left hip were performed.

Results The blood culture demonstrated *E. coli* infection, while the CT of the left hip showed a periprosthetic abscess, which immediately was drained surgically and a system of Negative Pressure Wound Therapy (NPWT) was started. During surgery a hemodynamic instability characterized by hypotension responsive to fluid resuscitation, metabolic acidosis and oligo-anuria occurred. Then the patient was admitted to ICU and septic shock was diagnosed and aminic support with norepinephrine and renal replacement therapy (CVVHDF) were set up. This approach led to gradual, albeit slow, improvement of clinical conditions and allowed to perform surgery to remove the infected prosthesis, needed for a final cleaning of the infected area.

Conclusions Early diagnosis of severe sepsis/septic shock and subsequent appropriate aggressive treatment based on drainage of abscess, hemodynamic support, targeted antibiotic therapy and renal replacement therapy have played a key role but, in our opinion, the application of NPWT has been decisive for good outcome. Indeed NPWT has allowed a continuous drainage of inflammatory/infectious material in the interval of time between the first surgery (abscess drainage) and the definitive surgical removal of the infected prosthesis.

Bibliography

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