

Managing Intra-Articular Knee Exposed Wound; Eradicate Infection, Gastrocnemius Flap, Knee Ankylosis: A Case Report

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INTRODUCTION:

Diabetic related infection remains a great challenge to orthopaedic surgeons. Intra-articular involvement with soft tissue deficit can lead to devastating results. We would like to share our experience of managing a case of septic arthritis of the knee joint with necrotizing fasciitis, complicated with an exposed articular surface of the knee following multiple extensive debridement.

CASE REPORT:

We report a case of a 48 year old female with uncontrolled diabetes, came to us with right leg necrotizing fasciitis and right knee septic arthritis. She had underwent multiple wound debridement and arthrotomy washout, which eventually was complicated with an exposed articular surface of the knee. Multiple cycles of vacuum assisted closure but failed. Her refusal for amputation complicates matter further. We had performed a rotational gastrocnemius flap to achieve soft tissue coverage, however part of the muscle became infected and non-viable. Therefore, multiple knee salvage procedure and techniques was attempted such as bedside continuous closed irrigation system, gentamycin intra-articular antibiotic injection, and multiple courses of intravenous antibiotics due to pseudomonas aeruginosa multi-drugs resistant organism. Cross knee external fixation was applied to facilitate wound management and to achieve ankylosis of the knee joint in functional position.

DISCUSSIONS:

Our goal of management in this case is to salvage limb, eradicate infection and obtain the best functional result for this patient.

In this case, probably an arthroscopic approach during early phase of presentation allows complete debridement and thorough lavage of the infected joint. Placing suction irrigation tubes in closed joint cavity is effective in washing out the post-operative hematoma and collection thus reducing chances of resurgery¹. Fleischman et al stated there are significantly reduce infection with topical intra-wound antibiotic administration². However, this

technique has some disadvantages due to adhesion and mechanical damage is possible². Some studies demonstrated substantial systemic absorption of gentamicin but due to repeatedly high dose gentamicin exposure⁴.

Vacuum Assisted closure(VAC) has been a successful modality of wound management which is in widespread use in several surgical fields. The main mechanisms of action are macrodeformation and microdeformation of the wound bed, fluid removal, and stabilization of the wound environment⁵. Sang Yang Lee at al reported a case of successful negative pressure wound management in infected wound with exposed knee joint after patellar fracture⁵.

In this case, the failure of VAC possibly due to large defect of soft tissue, devitalized surrounding tissue due to infection and airleak.

CONCLUSION:

Diabetic related intra-articular knee exposed infected wound remain great challenge to orthopaedic surgeon. In the event that a conventional debridement and vacuum assisted closure failed, the role of closed irrigation drainage system and intra-articular antibiotic can be considered.

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