

[P59] USE OF A NEW ANTIBIOTIC BONE SUBSTITUTE TO INDUCE HEALING OF OSTEOMYELITIS IN THE DIABETIC FOOT

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Aim: Aim of this work was to evaluate the efficacy of a new antibiotic bone substitute, Calcium Sulphate Hemihydrate + Hydroxyapatite + Gentamicin Sulfate (CSH + HA + GS), in the treatment of osteomyelitis (OM) in diabetic foot.

Methods: From June 2013 to February 2016 we used a new CSH + HA + GS compound to fill resected bone voids following surgical intervention in cases of diabetic foot OM. The uniqueness of this product is that it induces native bone growth, while the synthetic bone disappears and antibiotic is released into the surrounding tissues, maintaining high gentamicin concentrations for some weeks.

In 24 patients, with (8, 33,3%) or without (16, 66,7%) Charcot neuroarthropathy and post-lesional osteomyelitis, after removal of infected bone we applied 10 to 20 ml CSH + HA + GS, filling the residual spaces and aiming to stabilize the remaining bone fragments. When needed, these arthrodeses were stabilized by external-internal hybrid fixators. X-ray evaluations and, when indicated, MRI evaluations were performed before and after surgical intervention, and 3 months post-op. Revascularization with percutaneous angioplasty was performed when needed (13/24, 54.1%).

24 patients affected by OM were treated, 4 of them having 1st metatarsal head involvement, 7 having heel involvement, 13 tarsal and hindfoot involvement. After surgical intervention all of them were treated with standard medication and pressure relief.

Results: The four 1st metatarsal OM cases healed (100%), both in regards to infection and lesions. One (14,3%) of the patients with heel OM presented with a worsening of the infection and was treated by major amputation, one patient (14,3%) died during early follow-up, due to cardiovascular causes; all the remaining five patients (71,4%) healed, one of them was presenting good soft tissue growth two months from the intervention, and in the absence of clinical signs of OM relapse, was treated with a sural fasciocutaneous pedicled flap. 9 (69,2%) of the 13 patients who had midfoot or hindfoot partial resections healed, one patient is still ongoing, 3 (23%) patients presented late OM relapse or lesions evolution, treated with minor amputations. The healed patients are all wearing suitable shoes.

Conclusion: The use of a new CSH + HA + GS bone substitute has shown to be efficacious in inducing OM healing and preserving foot structures in diabetic feet.