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Hyperbaric Oxygen therapy as additional treatment option in a patient with chronic refractory osteomyelitis

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Introduction - aim of the study Hyperbaric Oxygen Therapy (HBOT) is a well-known therapy with a broad range of indications. With regard to wound healing and treatment of infections, several beneficial effects are attributed to HBOT. The aim of this report is to bring the potential additive value of HBOT in patients with a chronic osteomyelitis, refractory to conventional therapy, under attention. **Case Report** The patient is a 61-year old man, known with a non-insulin dependent diabetes mellitus. His diabetes is under good metabolic control. He is known with a polyneuropathy. In the medical history, only arterial hypertension and a coronary bypass operation are worth mentioning. He presented with an infected ulcer (2*2,5 cm) at the lateral side (base) of the fifth metatarsal, present for four weeks. Probe to bone was negative. The peripheral pulses were present, Doppler ultrasound demonstrated a normal arterial circulation. SPECT/CT, as well as magnetic resonance imaging and X-ray of the foot were all suggestive for an underlying osteomyelitis. As initial cultures grew *Corynebacterium* species and a resistant *Staphylococcus epidermidis*, the patient was admitted for local wound care (inclusive negative pressure wound therapy) and three weeks of intravenous vancomycin, continued by another three weeks of linezolid perorally at home. Adequate offloading was provided. However, after an initial good evolution, there was a stabilization of the wound (diameter 1,3 cm) with the head of the metatarsal bone clearly exposed in the wound without any tendency for further healing despite intensive wound care and intermittent courses of peroral antibiotics.

One year later, at the moment of a relapse of the infection, we decided to offer the man a treatment of HBOT. A total of 20 sessions (90 minutes, 2,5 atmosphere oxygen in a multiplace hyperbaric chamber) were administered together with another treatment of intravenous antibiotics. At the end of his admission, the wound had healed completely.

Conclusion: Although HBOT is not a widespread therapy, the authors believe that it merits a place in the treatment of patients with complicated diabetic foot problems.