

# Limb Salvage with Topical Oxygen Therapy – Two Cases of Complex Wounds in Multimorbid Patients and Imminent Major Amputation

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## Introduction

Patients suffering from chronic ischemic wounds often have multiple chronic conditions that impair wound healing. We present two cases we treated with a new therapy working with oxygen and cyclical pressure.

## Methods and Results

Topical Oxygen\* (TO) therapy works with purified oxygen and pressure cycles between 5 and 50mbar to enhance the partial oxygen pressure in the wound tissue.

### Case 1:

A 64 year old male patient had an autologous femoro-popliteal bypass surgery done 4 weeks prior to admission. We saw the patient with a complete necrosis of the skin on dorsal site of the foot. Surgical removal of necrosis and resection of compartment on back of foot as well as amputation of toes were performed. We continued therapy with negative pressure therapy (NPT) and intermittent TO therapy. After skin grafting NPT and intermittent TO therapy for 7 days was done. After stopping NPT, TO treatment alone was for 10 days before dismissal home.



17th July 2009. Patient presented in our hospital



Two days after surgery. Therapy with NPT and TO during dressing changes



Dismissed to home. After mesh-grafting NPT and intermittent TO therapy followed by TO therapy alone.



23 weeks after surgery

### Case 2:

72 year old male diabetic patient with AVK developed a gangrenous forefoot. Prior to admission to surgical ward therapy with prostavasin was done. There were no possibilities to improve arterial vascular status via surgical procedures. A transmetatarsal amputation with repeated debridement was performed followed by negative pressure therapy and resection of necrotic tissue. After 6 weeks of no further improvements we started with TO for 6 days. The wound granulated well and we decided to skin graft followed by negative pressure and TO therapy on days of dressing changes for 6 days. After 13 days of solely TO the wound granulated well and the patient was dismissed to rehabilitation.



2nd June 2009. Treatment of gangraenus wound since January. Transmetatarsal amputation due to worsening infection.



19th of June, NPT started.



15th of July. Increasing swelling and infection. Start with TO therapy



21/22nd July. After 6 treatments with TO. Mesh grafting planned



Dismissal 3 weeks after mesh-grafting. 13 days with TO therapy.



41 weeks after first admission. Readmission due to gangrene on big toe on the right foot.

## Conclusion

In these two complicated cases both associated with severe comorbidities TO proved to be a valuable adjunctive therapy with good results in healing and more important to maintain the functional status by avoiding major amputation.