

## **Scleroderma**

### **Microcirculation in patients with systemic scleroderma during treatment using hyperbaric oxygenation.**

Makeeva NP, Balakhonova NP, Kurakina LV, Kamshilina LS.

Hyperbaric oxygenation treatment of systemic scleroderma has a favorable effect on microcirculatory changes whose positive dynamics can be demonstrated by conjunctival biomicroscopy. These changes include accelerated blood flow and decrease in the degree of erythrocyte aggregation. The method can be used for the objective assessment and for prognosis of the effectiveness of hyperbaric oxygenation treatment in patients with systemic scleroderma.

### **Successful treatment of an extended leg ulcer in systemic sclerosis.**

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We report the successful surgical treatment of a large and painful leg ulcer associated with systemic sclerosis (scleroderma). In addition, there was a long occlusion of the superficial femoral artery, and ankle systolic blood pressure was 80 mmHg (ankle-brachial-index 0.65). All conservative treatments including systemic antibiotics, nifedipine, intravenous iloprost, intravenous penicilline G and hyperbaric oxygen failed. Pain was intolerable and below-knee amputation was considered. In a first attempt to save the limb, the patient underwent femoropopliteal bypass surgery. Despite a successful outcome of the bypass operation and normalization of the ankle blood pressure, the large wound remained recalcitrant and extremely painful. A second attempt to save the limb consisted of complete debridement of all sclerotic tissue down to the fascia and split skin grafting. The graft took in over 90% of the surface and the remaining wound healed spontaneously. Large leg ulcers in systemic sclerosis can become limb threatening. Radical debridement combined with a split skin graft seems to be a promising way to avoid amputation.

### **Ischemic scleroderma wounds successfully treated with hyperbaric oxygen therapy.**

J Rheumatol. 2006 Aug;33(8):1694-6.

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Hyperbaric oxygen therapy (HBOT) has been used to treat refractory wounds for the last several decades, with the majority of research focusing on wounds secondary to arterial insufficiency. We describe 2 patients with scleroderma with intractable bilateral extremity ulcers. Local ischemia was identified using transcutaneous oximetry. Each patient then underwent 30 treatments of HBOT at a relative depth of 2.4 ATA with resulting wound healing. This is the first reported successful use of HBOT to treat scleroderma ulcers, and may represent an unrecognized treatment option for these notoriously difficult chronic wounds.

### **Systemic sclerosis with various gastrointestinal problems including pneumoperitoneum, pneumatosis cystoides intestinalis and malabsorption syndrome**

Satoh A, Hoshina Y, Shimizu H, Morita K, Uchiyama M, Moriuchi J, Takaya M, Ichikawa Y.

Ryumachi. 1995 Dec;35(6):927-33.

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We describe here an experience of successful treatment of systemic sclerosis (SSc) complicated with various gastrointestinal (GI) problems including pneumoperitoneum, pneumatosis cystoides intestinalis and malabsorption syndrome. A 35-year-old female had developed sclerodactyly since February, 1990. She had been treated under the diagnosis of SSc at other hospital. She had required several hospitalizations because of nausea, vomiting and abdominal distension, but her GI symptoms had gradually deteriorated. In April 1993, she was referred to our hospital and admitted for the treatment of her GI problems. On admission, she had systemic cutaneous sclerosis and marked abdominal distension without peritoneal signs was recognized. Chest

and abdominal roentgenograms demonstrated massive free air under the diaphragm, marked dilation of small and large bowels, and multiple intestinal cysts (pneumatosis cystoides intestinalis ; PCI). We treated her GI problems with various modalities combined with medications, oxygen breathing, intravenous hyperalimentation and hyperbaric oxygen therapy. Pneumoperitoneum and PCI had disappeared after 8 courses of hyperbaric oxygen therapy and her GI symptoms had been well controlled by intravenous hyperalimentation. Thereafter, she has been on intermittent parenteral nutrition through subcutaneous port implantation. During the courses of this treatment, she developed an episode of Wernicke-Korsakoff (W-K) syndrome which was considered to associate with malabsorption syndrome. The W-K syndrome had recovered by intravenous administration of vitamin B1.

### **Use of hyperbaric oxygen in rheumatic diseases: case report and critical analysis.**

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Lupus. 1995 Jun;4(3):172-5.

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Hyperbaric oxygen has been used in patients with rheumatic disease for many years without reports of untoward or unusual complications for a variety of non-rheumatic indications. Recent evidence that hyperbaric oxygen inhibits the actions of certain cytokines, acts as an immune modulator and may help cognitive dysfunction has resulted in a re-examination of its potential role in rheumatic diseases. A case report of a lupus/scleroderma crossover patient is presented whose cognitive dysfunction improved after hyperbaric oxygen therapy. The history of hyperbaric oxygen and its physiology are related, along with a focused review of its effects on the immune and central nervous systems. Areas which might warrant further consideration by rheumatologists are outlined, as well as areas of concern.