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Hyperbaric oxygen and the reflex sympathetic dystrophy syndrome: a case report

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Peach G. Hyperbaric oxygen and the reflex sympathetic dystrophy syndrome: a case report. Undersea Hyperbaric Med 1995; 22(4): 407-408. —A patient suffering from acute smoke inhalation also had a long medical history that included reflex sympathetic dystrophy syndrome of the left foot and ankle. The entire foot and ankle were tender and cool to palpation; range of motion was severely reduced She was referred for hyperbaric oxygen therapy, and 15 min into the first treatment (46 min at 60 fsw) she reported a lessening of the pain in her foot; moreover, the foot was less cyanotic and warmer to the touch. Subsequent treatments continued to improve her conditions and for longer periods.

Reflex sympathetic dystrophy syndrome, hyperbaric oxygen therapy, foot, and ankle

A 44-yr-old woman was referred to our department suffering from acute smoke inhalation. The patient had an extensive medical history, including reflex sympathetic dystrophy syndrome (RSDS) of the left foot and ankle. A physical examination revealed a mottled and cyanotic foot and ankle. The entire foot and ankle were tender and cool to palpation; range of motion was severely reduced for both plantar and dorsiflexion. The patient's test results indicated a carboxyhemoglobin of 6.9%. She was unable to perform the psychometric test due to a severe headache. Because of the symptom (headache), she was given hyperbaric oxygen (HBO) therapy. The protocol in this institution for CO poisoning is 46 min of HBO at 60 feet of seawater (fsw). No complications developed during the compression and the patient tolerated the treatment well. Fifteen minutes into the treatment she reported relief of pain in the foot, and the foot was less cyanotic and warmer to the touch. The patient stated that her foot was pinker than it's been in years and that she was completely free of pain. She was asked to keep track of the duration of pinkness and pain relief: the foot stayed warm and pink for 8 h after treatment and painless for 18 h. She was next offered treatment at 33 fsw during the next scheduled 90-min session to take place the following day. Her foot was warm and pink for l h after this treatment and painless for 2 h. She was treated the following week at 45 fsw for 30 min, and after this session the patient reported that her foot remained warm, pink, and painless for 30 h.

DISCUSSION

Reflex sympathetic dystrophy syndrome is a chronic condition of severe burning pain, extreme sensitivity to touch, swelling, excessive sweating, and changes in bone and skin tissue. Researchers now believe that the symptoms occur because an injured nerve or nerves send mixed signals to the brain. In effect, these inappropriate signals short-circuit and interfere with normal blood flow and sensory signals, thus generating the symptoms of RSDS. The unremitting pain has caused many patients much physical and emotional misery.

This particular patient had few options for relief of the chronic pain associated with RSDS. She is allergic to steroids, non-steroidal anti-inflammation agents, and all narcotics; vasodilators were also ineffective. It is significant that her pain was relieved after initiation of HBO therapy. Manuscript received May 1995; accepted June 1995.

REFERENCE

1. Lankford R, Thompson J. RSDS upper and lower extremity: diagnosis and management: operative hand surgery, vol 26. St. Louis, MO: Mosby, 1977:163-178.

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