

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Vascular Diseases Quiz – Case 30

A 21-year-old woman with no past history of vasospastic disorders was presented with cyanotic hands and necrosis of the last phalanx of the three digits of each hand after saying that she was walking for almost two days in the mountains through the snow (fig. 1). The digits of the feet showed no problem. She asked for medical advice about 20 days following the exposure of the digits. Patient's personal history included smoking 20 cigarettes per day and high arterial pressure. Intra-arterial digital subtraction angiography revealed spastic digital arteries (figures 2, 3).

Laboratory results follow: CRP (C-reactive protein): 0.5 (normal range: <0.5), ESR (erythrocyte sedimentation rate): normal range, Ra test (rheumatoid arthritis): negative, ANCA (anti-neutrophil cytoplasmic antibody): negative, anti-SLE (systemic lupus erythematosus): negative, anti-nucleic cryoglobulins: negative, biopsy for PSS (progressive systemic sclerosis): negative, ABG'S: normal range.

The drug treatment contained iloprost infusions (fig. 3) for 15 days with overall improvement (fig. 4).

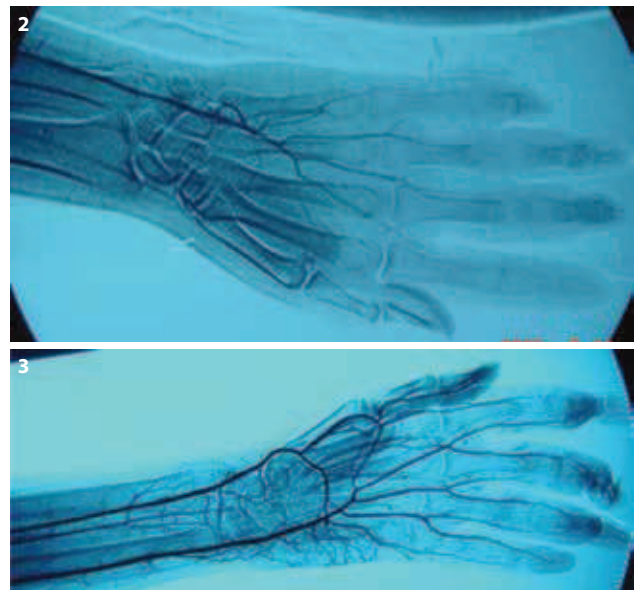
What is the diagnosis?

Comment

Necrosis of finger tissues is a pathologic situation often seen in different types of vasculitides, in aortic arch disease, in heavy smokers, and alcohol or drug abuse patients. We came to the conclusion that the patient's primary problem was provoked by prolonged cold exposure.



Figure 1. One week after admission.



Figures 2, 3. Endarterial angiography.



Figure 4. End stage of drug therapy.

ARCHIVES OF HELLENIC MEDICINE 2015, 32(5):669–670
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2015, 32(5):669–670

N. Asaloumidis,
P. Christophorou,
T. Kotsis

Vascular Division, Second Clinic
of Surgery, "Aretaieio" Hospital, Medical
School, National and Kapodistrian
University of Athens, Athens, Greece

Frostbite is the most serious peripheral injury of the cold exposure injuries and results in tissue necrosis from direct cellular damage and indirect damage secondary to vasospasm and arterial thromboses. Host factors: alcohol use, psychiatric illness, vehicular

trauma, vehicular failure, drug use and smoking. Environmental factors: ambient temperature, duration of exposure, altitude and wind speed. Factors correlating with amputation of parts: remote site of injury, presence of wound infection and delay in seeking treatment. The oldest documented case of frostbite was recognized in a mummy found in the Chilean mountains and dates back 5,000 years. More often were seen in military personnel during times of war, in men than in women at a ratio of 10:1 and in the age group from 30 to 50 years. Frostbite injuries can be classified into four degrees according to the severity of the tissue damage:

First degree is reversible changes to the tissues (a numb central whitish plaque with surrounding skin erythema). Second degree is associated with superficial dermal damage (soft clear or milky fluid-filled blister formation with soft perfused skin under the blisters surrounded by erythema and mild to moderate edema). Third degree involves deep dermal damage (hemorrhagic blisters over non-perfused skin with severe edema). Fourth degree implicates damage to subcutaneous tissue, muscle, nerves and or bone (hard, woody, blue-gray, mottled insensate tissue).

Triple-phase bone scan helps the differentiation between superficial and deep damage.

As treatment is concerned, the rewarming procedure should not begin until definitive medical care can be provided to avoid repeated freeze-thaw cycles, as these cause additional tissue necrosis. Rewarming should be rapid and be performed by submersion of the affected limb in warm water at 40 to 42 °C for 15 to 30 minutes. Debridement of necrotic tissues should be undertaken

at a later stage when a clear demarcation from viable tissues (1 to 3 months process) is visible. In case of obstructed circulation, immediate escharotomy and or fasciotomy is necessary. Late sequelae include altered vasomotor function, neuropathies, joint articular cartilage changes and growth defects in children due to epiphyseal plate damage.

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Corresponding author:

T. Kotsis, Vascular Division, Second Clinic of Surgery, "Are-taieio" Hospital, Medical School, National and Kapodistrian University of Athens, Athens, Greece
e-mail: kotsisth@otenet.gr