

## Atheroembolism

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### **Successful treatment of finger atheroembolism with low-level laser irradiation (LLLI): report of a case.**

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Atheroembolism constitutes a subset of acute arterial occlusion, in which, multiple small deposits of fibrin, platelet, and cholesterol debris embolize from proximal atherosclerotic lesions or aneurysmal sites. Ischemia resulting from atheroemboli in extremities is notoriously difficult to treat and circulatory disturbance in these regions usually results in amputation. During past 30 years, low-level lasers have been widely used in medical fields. Low-level laser irradiation in red and near infrared region, locally or intravenously may result in vasodilatation, increased tissue perfusion and neovascularization.

A 64 years-old Iranian man referred to our clinic with acute atheroembolism of right index finger distal phalanx. There was no predisposing cardiovascular factor except for a mild hypercholesterolemia, and physical examination was generally normal. During 12 sessions (about 30 days) of low-level laser therapy with infrared light, 980 nm/ 100 mW and red light, 650 nm/ 30 mW, associated with 3 sessions of intravenous red light laser, 2 mW, ischemia disappeared and the finger was quite normal. On 12 months of follow-up, the patient was uneventful.

Our observations during treatment process confirmed the results of previous experimental and clinical observations about LLLI effects on tissue healing of ischemic areas demonstrating that delivery of laser energy to the ischemia-induced necrotic area may have an important beneficial effect on patients with acute thromboembolism of fingers, preventing them from amputation or other invasive surgical interventions. However, additional studies and more clinical evidences are to be needed to demonstrate the various aspects of this application of lasers in medical practice.

