INTRODUCTION: Traditionally, frostbite management includes rewarming protocols, supportive care, and delayed amputation after tissue demarcation. Recent studies have described alternative management with angiography and intraarterial lysis to treat the microvascular thrombotic consequences of ice crystal formation. Our purpose was to evaluate the effects of intraarterial thrombolysis on digital amputation rates and hospital length of stay (LOS) for severe frostbite.

METHODS: We identified 17 patients with severe frostbite requiring greater than 48-hour intensive care unit admission from 2000–2017. In the treatment cohort, eight patients (7 males; 1 female) with a mean age 40 years (range: 16–68 years) underwent intraarterial thrombolysis treatment. For the control group, nine patients (8 males; 1 female) with a mean age of 53 years (range: 39–66 years) received non-surgical supportive treatment. Vascular comorbidities were noted in two patients (25%) in the treatment group and three patients (33%) in the control group. The number of digits at risk, duration of thrombolysis, thrombolytic agents used, number of digital amputations, hospital LOS, follow-up period, and complications, were all retrospectively reviewed using our electronic medical record (EMR).

RESULTS: In total, seven upper extremities and nine lower extremities, for a total of 80 digits, were at risk in the thrombolysis cohort. There were 100 digits at risk in the control group. Mean duration of thrombolysis was 26 hours (range: 5–55 hours). All treatment patients received tissue plasminogen activator (tPA) infused at 0.25–0.5 mg/hour in addition to heparin infused at 500–1000 units/hour. Intraarterial alprostadil was infused in four limbs (25%), two limbs (13%) received nitroglycerin, and two limbs (13%) received nicardipine. Amputation was required in 12 (15%) lysis digits and 77 (77%) control digits (p=0.0003). Average length of hospital stay was 14 days in the lysis group and 38 days in the control group. In the control group, two patients required extended hospitalizations secondary to amputation complications.

CONCLUSION: For treatment of severe frostbite, endovascular intraarterial thrombolysis is associated with lower rates of digital amputations and fewer hospital days when compared to current standard treatment protocols.

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were performed under general anesthesia using a double-lumen endotracheal tube to ensure selective deflation of the ipsilateral lung, trocar insertion, and creation of an artificial apical pneumothorax. Then, a specifically designed thoracoscope was inserted, and the second, third, and/or fourth thoracic sympathetic ganglia were severed by means of electrocautery. To assess the improvements in quality of life over time, a questionnaire was submitted to a randomized group of 77 patients treated with this minimally invasive technique. The questionnaire included specific questions concerning several psychological and clinical features.

RESULTS: With a mean follow-up of 9.5 years, 98% of the patients reported a satisfactory change in the quality of life, 1.4% showed recurrences, and only 0.6% reported severe compensatory sweating. According to the Wilcoxon test, the comparison between presurgical and postsurgical data showed a statistically significant difference ($p < 0.001$).

CONCLUSION: Both early and long-term postoperative outcomes prove the effectiveness of our procedure. Furthermore, 98% of patients reported a significant improvement in their quality of life, proving the durability of this procedure. Thus, in our experience, minimally invasive video-assisted thoracic sympathectomy is a reliable treatment technique for upper limb hyperhidrosis with minimal related morbidity.

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Microsurgical Approach for Hemodialysis Access: Brescia–Cimino Fistula Reconstruction Using Microscope

INTRODUCTION: The distal part of the forearm is preferred for hemodialysis access during arteriovenous (AV) fistula reconstruction. However, the small diameter of the forearm vessel leads to complications such as obstruction, which have resulted in a mean patency rate of 65.2% (range: 56–79%) in the first year after surgery. In this study, Brescia-Cimino AV fistula reconstruction for hemodialysis access was performed using microscope, and the patency rate was determined.

METHODS: Six patients with chronic renal failure (CRF) were included in this retrospective study. From 2014 to 2015, the patients received Brescia-Cimino AV fistula reconstruction. A vein diameter of >2 mm at wrist level was confirmed by pre-operative venogram, and Doppler mapping was performed. Microanastomosis of the AV fistula was performed in an end-to-side suture pattern with Nylon #9-0. One month after surgery, vessel obstruction and blood flow were monitored by venogram and portable Doppler. The mean patency rate was obtained by the Kaplan-Meier method.

RESULTS: Five out of the six patients received hemodialysis without signs of obstruction or complications; thus, the mean patency rate is 83.3%. One female patient underwent percutaneous transluminal angioplasty (PTA) before and after AV fistula operation due to vessel obstruction. The mean follow-up period was eight months (range: 5–12 months).

CONCLUSION: For relatively healthy vessels with diameter of >2 mm, AV fistula reconstruction (Brescia-Cimino) by fine microsurgical suturing under a microscope can be safely done at the wrist without complications such as ischemic hand syndrome or infection.

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