



Case Report

Unilateral Video-Assisted Thoracoscopic Sympathectomy in the Treatment of Raynaud's Syndrome: A Case Report

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Abstract

Raynaud's syndrome is a clinical entity characterized by episodes of pain, digital ischemia and hyperhidrosis in the distal part of the extremities due to arterial vasospasm phenomena. It is subdivided into primary and secondary, which is a manifestation of other underlying pathologies or stressors such as result of an imbalance between vasoconstriction and vasodilation. In most cases, conservative medical treatment get good control in most cases. Thoracic sympathectomy is indicated as the last therapeutic option in refractory cases. We report a case of a 58-year-old male with digital ulcers on the left hand due to Raynaud's syndrome resistant to conservative treatment who underwent thoracic sympathectomy.

Keywords: Raynaud's syndrome; Refractory cases; Thoracic sympathectomy

Case Presentation

We present the case of a 58-year-old male, smoker, with arterial hypertension and systemic sclerosis. VATS sympathectomy is indicated for secondary Raynaud's syndrome with digital ulcers on the left hand resistant to conservative treatment. We have your consent for the publication of the data.

After basic monitoring, to which thermal monitoring was added in the second finger of both hands (Figures 1.1 to 1.3), intravenous anesthetic induction was performed with propofol 170 mg, fentanyl 150 mcg, and rocuronium 60 mg. A 37 Fr left double-lumen tube is inserted to use right one-lung ventilation.

The patient is placed in the semi-Fowler's position with the upper limbs abducted at 90 degrees.

Anesthetic maintenance is performed with propofol 6 mg/kg/h and fentanyl 150 mcg. It is accessed through a miniport in the fourth left intercostal space, the sympathetic chain is identified and it is sectioned at the level of T3 (Figures 1.4 and 1.5). At that time, an increase in skin temperature of 1.3 °C was observed in the left hand (usually increasing by 1-3 °C), with no changes in the right hand (Figure 1.6). Once the efficacy of the procedure had been verified, thirty minutes before surgical closure, dexamethasone 8 mg, paracetamol 1 g, dexketoprofen 50 mg, and ondansetron 4 mg were administered. After reversal of the muscle block with sugammadex 150 mg, and once he regained consciousness, he was extubated and transferred to the post-anesthetic recovery unit (Figure 1.7). No perioperative incidents were recorded.

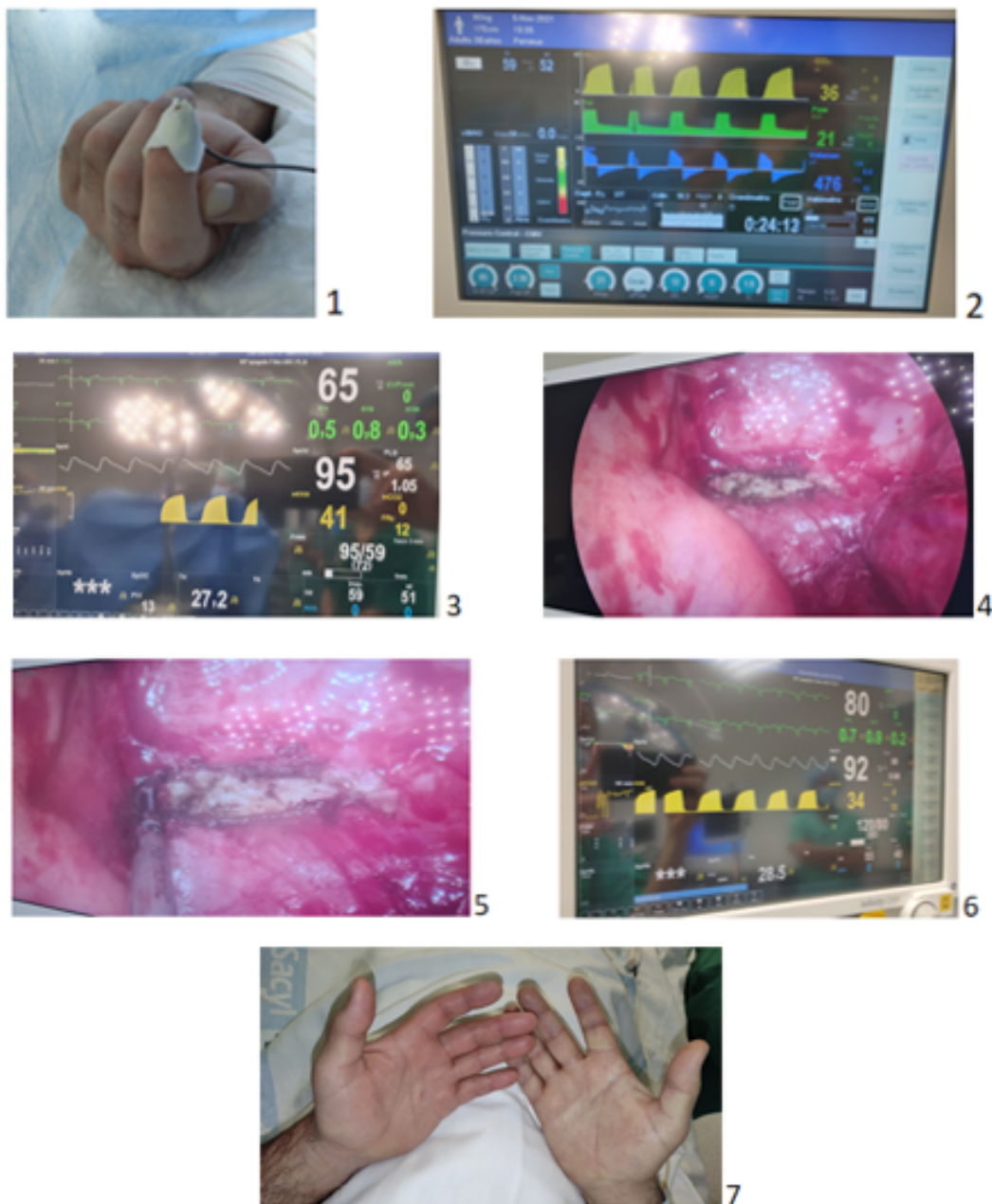


Figure 1: (1) Thermal monitoring in the second finger of both hands. (2) Respirator screen in one-lung ventilation. (3) Monitoring of vital signs at the beginning of the procedure; temperature of 27.2 °C. (4) Identification of the sympathetic nerve chain. (5) Section of sympathetic nerve chain at T3. (6) Monitoring of vital signs at the end of the procedure; temperature of 28.5 °C (7) Difference in skin coloration between both hands after the procedure.

Discussion

Video-assisted Thoracoscopic surgery of the thoracic sympathetic nervous system is a minimally invasive technique that has shown good therapeutic results with less morbidity than more aggressive techniques. Although it has been studied mainly in primary hyperhidrosis, it has also been used in Raynaud's syndrome, facial flushing, and abdominal pain due to chronic pancreatitis, reflex sympathetic dystrophy or anginal syndromes. For Raynaud's syndrome, the scarce published literature defends its use as a last resort for refractory cases [1], offering an effective and safe treatment with favorable cosmetic results, reduced hospitalization and minimal postoperative pain. Sympathetic denervation causes long-term effects on lung function, cardiac function, skin coloration, and psychological status. They highlight

a decrease in the forced vital capacity, the forced expiratory volume in the first second and the maximum mid-expiratory flow, a mild obstructive pattern, an increase in bronchial hyper reactivity and a decrease in the mean heart rate; all of them without clinical significance at the moment. Multidisciplinary research is needed on the long-term effects of this treatment, to unify the criteria for optimal patient selection and to refine the procedure in order to increase the post-surgical success rate.

References

1. Aljehani Y, Alhourri A, Turkistani A, ShahBahai R, AlQatari AA (2020) Bilateral uniportal video-assisted thoracoscopic sympathectomy for managing secondary Raynaud's in CREST syndrome: A case report. *Int J Surg Case Rep.* 75:203-206.