

Thoracal Sympathectomy in Buerger's Disease: A Case Report

Beurger Hastalığı'nda Torakal Sempatektomi: Olgu Sunumu

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Abstract

Thromboangiitis obliterans (Buerger's disease) is an inflammatory disease that affects small and medium-sized vessels in the upper and lower extremities, and is frequently seen in young smokers. It is characterized by ischemia, necrosis, finger ulcers and pain in the distal extremities due to vascular inflammation and thrombosis. A thoracic sympathectomy was performed to provide vascularization to a 47-year-old patient with a diagnosis of Buerger's Disease who had ulcers and pain in a distal extremity that did not resolve despite medical treatment. Since it is a rarely used method in the treatment of Buerger's Disease, we wanted to present our experience in the light of the literature.

Keywords: *Thromboangiitis Obliterans, Sympathectomy, Thoracic Surgery.*

Öz

Tromboangiitis obliterans (Buerger hastalığı), üst ve alt ekstremitenin küçük ve orta çaplı damarlarını etkileyen inflamatuvar bir hastalıktır. Sıklıkla sigara içen genç erkeklerde görülür. Vasküler inflamasyon ve tromboza bağlı olarak, distal ekstremitelerde iskemi, nekroz, parmak ülserleri ve ağrı ile karakterizedir. Kırk yedi yaşında Beurger Hastalığı tanılı, medikal tedaviye rağmen geçmeyen distal ekstremitede de ülser ve ağrı şikayeti bulunan hastaya vaskülarizasyonu sağlamak amacıyla torakal sempatektomi uyguladık. Beurger Hastalığının tedavisinde nadir uygulanan bir yöntem olması nedeniyle deneyimlerimizi literatür eşliğinde sunmak istedik.

Anahtar Kelimeler: *Tromboangiitis Obliterans, Sempatektomi, Göğüs Cerrahisi.*

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Buerger's Disease is a progressive vasculitis affecting medium and small vessels. Inflammation developing in the vessels leads to a predisposition to thrombosis, resulting in necrosis and ulceration in the distal extremities. For treatment, vasodilators can be applied to reduce vaso-spasm and a sympathectomy can provide revascularization. We presented here the first sympathectomy performed in our clinic on a patient with Buerger's Disease to share our experience.

CASE

A 47-year-old female patient who was being followed up for diabetes and hypertension, and who had a 20-pack year smoking habit but who had quit 10 years earlier, had applied to the cardiovascular polyclinic one year earlier with a swelling on the third finger of her right hand. The patient was started on acetylsalicylic acid 100 mg/day and pentoxifylline 1200 mg/day after being diagnosed with Buerger's Disease based on examinations. The third finger of the patient's right hand was amputated at the distal phalanx level after the swelling in the finger did not regress and bruising developed (Figure 1). The patient, whose blood sugar was not under control, developed swelling and pain in the left index finger during follow-up, and was referred to us due to the lack of regression in complaints, despite medical treatment (Figure 2). A thoracic sympathectomy was planned to prevent vasoconstriction and to reduce peripheral resistance, as there was no chance of limb revascularization. The procedure was performed under general anesthesia using a double lumen endotracheal tube, with the patient placed in a semi-sitting position of 45–60° with both arms abducted at 90°. The thorax was entered with a Thoracoport at the point at which the anterior axillary line intersects with the fourth intercostal space. Using a zero-degree 5 mm optic, the sympathetic nerve extending downwards adjacent to the vertebrae was observed under the endo thoracic fascia (Figure 3). Ganglion levels were determined with the first rib under the fatty tissue. The T2–T3 sympathetic ganglion and its chain were resected by burning with hook electrocautery (Figure 4). During the procedure, care was taken not to damage the stellar ganglia or intercostal vessels. The same procedure was repeated for the other side. The patient was removed from the operation without a drain. On the first day following surgery, the bruising on her hands had subsided and an increase in temperature was noted. The patient was discharged on the third postoperative day. At the first month control, the pain in the fingers had gone, the ulcer on her index finger had healed, and there was no compensatory sweating in another area (Figure 5).



Figure 1: Amputated distal phalanx



Figure 2: Left index finger with swelling and pain

DISCUSSION

Buerger's disease is a segmental inflammatory, thrombotic occlusive peripheral vascular disease of unknown etiology that frequently affects the medium and small vessels of young smokers. The disease was first described by Von Winiwarter in 1879, while Leo Buerger published a detailed description of the pathological manifestations in 11 amputated limbs in 1908 and gave his name to the disease (4). Patients present with ischemia of the distal extremities, pain in the extremities and finger ulcers. As the disease is associated with the use of tobacco products, quitting smoking is important for the achievement of revascularization, while the development of ulcers can be

prevented by providing revascularization through treatments involving calcium channel blockers, anticoagulants, thrombolytics and prostaglandin analogs. Aside from medical treatment, sympathectomy can be counted among the available treatment options. With sympathectomy, the smooth muscles in the capillary vessel tunica media layer are relaxed and capillary perfusion is increased through vasodilation, leading to an improvement in the ischemic changes. Bozkurt et al. (5) reported improvement and dimensional reduction in ulcers after sympathectomy and a reduction in pain at rest. The most common complication after sympathectomy is compensatory hyperhidrosis, which occurs in 3–80% of cases (6). Yazbek et al. (7) stated that as T2 rises to the level of the sympathetic ganglia, compensatory hyperhidrosis is more common than interventions at such lower levels as T3-T4.



Figure 3: Sympathetic nerve



Figure 4: T2- T3 Sympatic ganglion burned by electrocooter



Figure 5: Finger ulcers that heal after surgery

CONCLUSION

After the performance of a thoracic endoscopic sympathectomy in our clinic for the treatment of Buerger Disease, the patient's complaints of pain, coldness, bruising and ulcers were noted to reduce. The T2-T3 sympathetic ganglion level was resected and no compensatory sweating was observed at the time of the first-month control. Sympathectomy can thus be considered as an alternative to medical treatment in cases of peripheral vasculitis such as Buerger Disease.

CONFLICTS OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Concept - B.A.Ş., S.Y., A.U., Ş.Ü.; Planning and Design - B.A.Ş., S.Y., A.U., Ş.Ü.; Supervision - B.A.Ş., S.Y., A.U., Ş.Ü.; Funding - A.U., S.Y.; Materials - Ş.Ü., A.U.; Data Collection and/or Processing - B.A.Ş., A.U.; Analysis and/or Interpretation - B.A.Ş., S.Y.; Literature Review - B.A.Ş., S.Y.; Writing - B.A.Ş., A.U.; Critical Review - B.A.Ş., A.U., S.Y.

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