

Horner Syndrome Following Venous Catheterization for Chemotherapy: Scientific Letter

Kemoterapi Amaçlı Venöz Kateterizasyonu İzleyen Horner Sendromu

H. Kadircan KESKİNBORA, MD,^a
Kader KESKİNBORA, MD,^b
Tansu GÖNEN, MD^a

^aDepartment of Ophthalmology
Namık Kemal University
Faculty of Medicine, Tekirdağ

^bDepartment of Anesthesiology,
Pain Clinic, İstanbul University
Cerrahpaşa Faculty of Medicine
İstanbul

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Yazışma Adresi/Correspondence:
Tansu GÖNEN, MD
Namık Kemal University
Faculty of Medicine,
Department of Ophthalmology, Tekirdağ,
TÜRKİYE/TURKEY
tgonen@nku.edu.tr

ABSTRACT Percutaneous venous catheterization is a major way for repetitive parenteral chemotherapeutic drug administration in cancer patients. Complication of catheterization include those associated with catheter insertion (pneumothorax, arterial and nerve injuries) and those associated with long-term catheter use (thrombosis and infection). Horner's syndrome as an unusual complication of central catheterization is the result of an interruption of the ipsilateral sympathetic nerve supply at any site along its course from the hypothalamus to the eye. To prevent complications of central catheterization, ultrasound guidance has been suggested for high-risk cases. Clinicians should take care to distinguish the unusual complication that results from central venous catheterization for intravascular administration in cancer patients.

Key Words: Horner syndrome, central venous catheterization, complications

ÖZET Perkütan venöz kateterizasyon, kanser hastalarında tekrarlayan parenteral kemoterapötik ilaç uygulamaları için önemli bir yoldur. Kateterizasyon komplikasyonlarından pnömotoraks, arter ve sinir yaralanmaları kateter girişiyle ilişkiliyken, tromboz ve enfeksiyon uzun süre kateter kullanımı sonucunda gelişir. Santral kateterizasyonun nadir bir komplikasyonu olan Horner sendromu hipotalamustan göze doğru uzanan sempatik sinirin tek taraflı hasarından kaynaklanır. Santral kateterizasyonun komplikasyonlarını önlemede ultrasonografi rehberliği yüksek riskli olgularda yardımcıdır. Klinisyenler, kanser hastalarında intravasküler tedavi için yapılan santral venöz kateterizasyondan kaynaklanan bu nadir komplikasyonu gözden kaçırmamak için dikkatli olmalıdır.

Anahtar Kelimeler: Horner sendromu; santral venöz kateterizasyon; komplikasyonlar

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Horner's syndrome is a well-known clinical condition with ptosis, myosis and enophthalmic expression of the eye and was reported as a complication following repeated attempts for catheterization of the internal jugular vein, neck dissection, apical tumors of the lung, thyroidectomy, thoracic epidural anesthesia or analgesia, stent application and internal carotid artery dissection.^{1,2} This letter presented a case with Horner's syndrome developed at the right side following internal jugular vein catheterization.

A 38-year-old male patient with anaplastic large cell lymphoma underwent chemotherapy. Due to difficulty using peripheral veins for intravenous

us administration, jugular central venous catheterization was preferred. The day after catheterization, myosis and ptosis developed in the right eye of the patient (Figure 1). He also had a hoarse voice. There was no problem after catheterization of the left subclavian vein (Figure 2). The patient died after one month due to anaplastic cell carcinoma.

Percutaneous venous ports are usually implanted for parenteral chemotherapeutic drug administration in cancer patients. These catheters allow measurement of advanced hemodynamic variables and delivery of medications and nutriment. Unfortunately, complications associated with these catheters were reported in more than 15 percent of the patients.³ Horner's syndrome following catheterization was caused by the effect of mechanical trauma or a hematoma on the cervical sympathetic chain or the superior cervical ganglion, or posterior to the vein itself. In addition, damage to the sympathetic trunk may occur during internal jugular venous cannulation caused by excess rotation of the head and neck, which disturbs the normal anatomical relationships.⁴ In this patient, meticulous diagnostic tests including ultrasonography and magnetic resonance imaging were performed. There was no evidence that insertion of the needle was a cause of direct damage and no hematoma was detected. We attributed this complication to the excess rotation of the head and neck during the catheterization.

In order to prevent complications of central catheterization, ultrasound guidance has been suggested in high-risk cases. A recent meta-analysis of randomized studies presented significant reduci-



FIGURE 1: Right Horner syndrome following jugular catheterization.



FIGURE 2: Jugular catheter applied first time on the right side of the chest (red arrow). The second attempt done on the left side (black arrow).

on in the complication rate when ultrasound guidance was used by medical staff with limited experience in catheterization of the subclavian and internal jugular veins.⁵

Considering Horner's syndrome a possible complication of percutaneous internal jugular vein catheterization would prevent unnecessary diagnostic work-ups to explore the etiology of anisocoria.

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