

A Rare Case of Horner Syndrome Following Internal Jugular Vein Catheterization: Successful Management with Mullerectomy

Betül Dertsiz Kozan¹  Bahadır Utlu² 

1 Gazi Yaşargil Training and Research Hospital, Department of Ophthalmology, Diyarbakır, Türkiye

2 Erzurum City Hospital, Department of Ophthalmology, Erzurum, Türkiye

Abstract

Background: Horner syndrome is clinically characterized by miosis, ptosis, enophthalmos, anhidrosis. A 52-year-old male patient had aortic valve replacement surgery 6 months ago. The patient, who underwent right internal jugular vein (IJV) catheterization, was admitted to our clinic on the 15th day after developing postoperative ptosis and miosis in the right eye. During the follow-up period, since there was no clinical improvement in the 6th month and the Phenylephrine test was positive, mullerectomy surgery was performed. Horner syndrome is a very rare complication. It occurs due to damage to the hypothalamoocular sympathetic nerve pathway. Ptosis is one of the correctable complications. The advantage of mullerectomy is that it is performed while preserving the tarsus. The advantage of protecting the tarsus is to ensure eyelid stability, prevent malposition, prevent fold formation on the eyelid, protect the meibomian glands and reduce suture keratopathy. The rare complication of Horner syndrome after IJV catheterization should be kept in mind. Treatment of ptosis due to Horner syndrome can be performed with mullerectomy.

Keywords: Horner syndrome, Ptosis, Jugular vein catheterization, Mullerectomy.

Corresponding Author:

Betül Dertsiz Kozan, MD, Gazi Yaşargil Training and Research Hospital,
Department of Ophthalmology, Diyarbakır, Türkiye
E-mail: dr.dertsiz@hotmail.com



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INTRODUCTION

Horner syndrome; is clinically characterized by miosis, ptosis, enophthalmos, anhidrosis and elevation of the lower eyelid. This condition occurs due to a total or partial lesion anywhere in the sympathetic chain extending from the hypothalamus to the eye (1,2). Horner syndrome was first described by Johann F.Horner (1831-1886), a Zurich ophthalmologist (3). In this study, we aimed to report the surgical management of ptosis secondary to Horner's syndrome.

CASE REPORT

A 52-year-old male patient had aortic valve replacement surgery 6 months ago. The patient, who underwent right internal jugular vein (IJV) catheterization, was

admitted to our clinic on the 15th day after developing postoperative ptosis and miosis in the right eye. The surgery and IJV catheterization were confirmed by epicrisis notes and the case was a doctor. Vision was 10/10 on the Snellen chart with bilateral correction. Right Margin Reflex Distance (MRD) 1 was measured as 2mm, left MRD 1 was measured as 4mm. The pupil was measured as right: 2mm, left: 4mm. On the Hertel exophthalmometer, it was measured as right: 19 mm, left: 23 mm. The right eye had an enophthalmos appearance. By instilling 2.5% Phenylephrine, the ptosis resolved in the 10th minute and the test was considered + (Figure 1).

MRD1 was measured as 4 mm in both eyelid. At the final follow-up, there was no improvement in miosis and enophthalmos. Informed consent was obtained from the patient.



Figure 1: The ptosis resolved in the 10th minute and the test was considered positive during the follow-up period, since there was no clinical improvement in the 6th month and the Phenylephrine test was positive, mullerectomy surgery was performed. Postoperatively, the patient's ptosis improved (Figure 2).



Figure 2: Postoperatively, the case's ptosis improved

DISCUSSION

Complications such as infection, air or thrombus embolism, dysrhythmias, hematoma, pneumothorax, hemothorax, hydrothorax, chylothorax, cardiac perforation, trauma to adjacent nerves and arteries, and thrombosis may occur due to central venous catheterization (4). Horner syndrome is a very rare complication (5). Common causes include; trauma, migraine, headache, neck or thyroid surgery, aortic dissection, carotid dissection, tuberculosis, pancoast tumor and epidural anesthesia (7). Due to the proximity of the cervical sympathetic trunk to the IJV, damage to the trunks may occur due to direct trauma with a needle or pressure from the resulting hematoma (6). The risk of damage to the sympathetic nerve increases with a high level approach to the IJV and a large angle between the needle and the skin. In this case, ptosis, miosis and enophthalmos were observed after right IJV catheterization. Since the neurological examination findings were normal and there was no mass in the neck and lung apex, it was thought that the patient had developed Horner syndrome due to truncus damage due to direct trauma with a needle. Horner syndrome can be seen not only in repeated interventions, but also after the catheter is inserted for the first time by experienced doctor (8). Ultrasound-guided IJV catheterization is recommended in high-risk patients (9,10). Horner syndrome is not a life-threatening condition for the patient, but the underlying pathology should be investigated and determined and, if possible, treatment should be directed towards the cause. However, it may develop due to surgical interventions in the head and neck area, medulla spinalis traumas or hypothalamic infarction and may be irreversible. Ptosis, one of the correctable complications; Fasanella-Servat operation was first described for mild ptosis of 1.5-2 mm in cases where the levator palpebra muscle function is good (11,12). Later, the method was modified and mullerectomy surgery was developed (13). The advantage of mullerectomy is that it is performed while preserving the tarsus. The advantage of protecting the tarsus is to ensure eyelid stability, prevent malposition, prevent fold formation on the eyelid, protect the meibomian glands, and reduce suture keratopathy (14). The rare complication of Horner syndrome after IJV catheterization should be kept in mind. Treatment of ptosis due to Horner syndrome can be performed with mullerectomy according to the 2.5% Phenylephrine test response.

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Abbreviations List

IJV: Internal Jugular Vein

MRD1: Margin Reflex Distance 1

Ethics Approval and Consent to Participate

Ethics approval was not required for this case report, as per institutional and international guidelines. Written informed consent for clinical evaluation and treatment was obtained from the patient.

Consent for Publication

Written informed consent was obtained from the patient for publication of the case details and accompanying clinical images.

Availability of Data and Materials

All data supporting the findings of this case report are included within the article. Additional information is available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that they have no competing interests.

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Author Contributions

B.D.K. managed the clinical evaluation, surgical planning, and operative procedure. B.U. contributed to literature review and manuscript preparation. Both authors participated in writing and revising the manuscript and approved the final version.

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