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BILATERAL NERVUS VIth PALSY ET CAUSA HYPERCOAGULATION: A CASE REPORT

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ABSTRACT

Background: The VIth nerve, or abducens nerve, is the sixth cranial nerve that plays a role in eye movement. When the VIth nerve is paretic, the lateral rectus muscle becomes weak, causing impaired eye abduction. In adults, the most common cause of damage to the abducens nerve fascicle (N. VIth) is ischemia, and one of the most common causes is hypercoagulation.

Case Presentation: This report presents a case of a 23-year-old woman who was consulted from the neurology department with a diagnosis of Cephalgia and Inferior Paraparesis type flaccid repair and Esotropia OS. On ophthalmological examination, it was found that the left eye had rotated inward since 3 weeks ago. The patient was also found to have impaired eye movement to the side in both eyes. Eye examination showed right eye vision of 6/15 Ph 6/12 and left eye 6/21 ph 6/15. In the laboratory examination, several increases were obtained, LDL: 106, HDL: 39, Hba1c: 7.2, BSN: 112, BSPP: 159, Fibrinogen: 375, D-dimer: 1.86, Hba1c: 7.2.

Conclusion: This case Paralysis of the VIth nerve due to acute ischemia generally has a good prognosis with recovery within 6-12 weeks if risk factors are optimally managed. Treatment focuses on controlling risk factors such as optimizing blood sugar, controlling blood pressure. Complaints are reversible but patients should consider periodic ophthalmological examinations.

Keywords: Nervus VIth palsy, hypercoagulation

BACKGROUND

Ischemic cases are one of the problems often encountered in the field of neurology. The process of ischemia results in impaired blood supply to nerves that are susceptible to vascular insufficiency. This condition is often found in the elderly population or with conditions that have risk factors. One of the main causes is ischemia, especially in patients with vascular risk factors such as hypertension, diabetes mellitus, and atherosclerosis.

This condition is often found in the elderly population and can cause horizontal diplopia that interferes with quality of life. A thorough understanding of the pathophysiology, risk factors, and diagnostic approaches is essential for early treatment and prevention of further complications.[1,2]

Nerve VIth, or the abducens nerve, is the sixth cranial nerve that plays a role in eye movement. This nerve is a pure motor nerve that innervates the lateral rectus muscle, a muscle that functions to move the eyeball laterally (abduction). When nerve VIth paresis occurs, the lateral rectus muscle becomes weak, causing impaired eye abduction. As a result, the eye is pushed medially (esotropia), and the patient experiences horizontal diplopia when looking laterally.[2-4]

The same mechanism may explain the non-localized sixth nerve palsy that can be seen with increased or decreased intracranial pressure. In adults the most common cause of damage to the abducens

nerve (CN VIth) fascicle is ischemia and the most common cause is hypercoagulability. This case report aims to report a case of paresis of the VIth nerve and causes hypercoagulation.[1,3,6]

CASE PRESENTATION

A woman, Mrs. IL, 23 years old, was consulted from the neurology department of Dr. Mohammad Hoesin Hospital on November 20, 2024 with a diagnosis of Cephalgia and Inferior Paraparesis type flaccid repair and Esotropia OS. A woman, Mrs. IL, 23 years old, was consulted from the neurology department of Dr. Mohammad Hoesin Hospital on November 20, 2024 with a diagnosis of Cephalgia and Inferior Paraparesis type flaccid repair and Esotropia OS.

The patient was consulted because of complaints of the left eye had rotated inward since 3 weeks ago. The patient also complained of double vision. Complaints of blurred vision were present. Complaints of white eye spots since 3 months ago were felt. The patient also complained of intermittent headaches, accompanied by complaints of nausea but no vomiting. Other complaints in the eyes such as sore eyes, complaints of red eyes, complaints of eye discharge, complaints of a feeling of obstruction, complaints of watery eyes, complaints of seeing black objects and complaints of seeing rainbows weredenied. The patient has a history of weakness in both limbs and numbness in both hands since 1 week ago. Based on the anamnesis, the complaints felt by the patient at this time are very likely due to increased ischemia from hypercoagulation. Anthropometric examination showed obesity.

Ophthalmology Examination

On ophthalmology examination, it was found that the left eye had been rolling inward since 3 weeks ago. The patient also found that there was an obstruction of eyeball movement to the side in both eyes. The patient also found decreased vision in the right and left eyes. Fundus examination within normal limits.

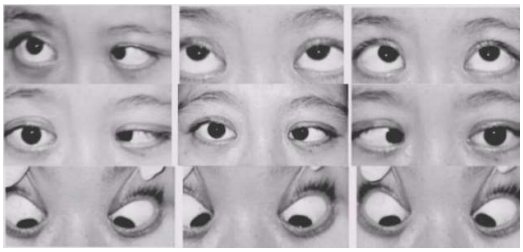

Figure 1: Photos patient Examination

In the primary position, the left eye is deviated inward. On examination, the right eye shows inability to gaze laterally, and the left eye is also unable to gaze lateral.

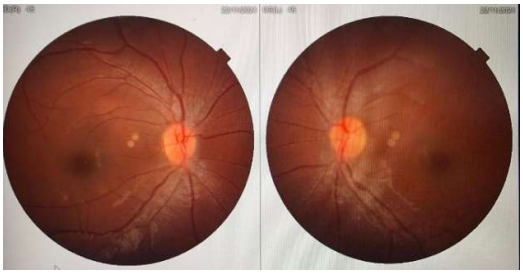

Figure 2: Funduscopy Examination

From the figure 2 showed oculi dekstra and sinistra papil : Round, sharp borders, red color, CDR 0,3, AV 1:3, Macula : Reflek fovea (+), Retina : Good Blood Vessel Countour

Figure 3: MRI Examination

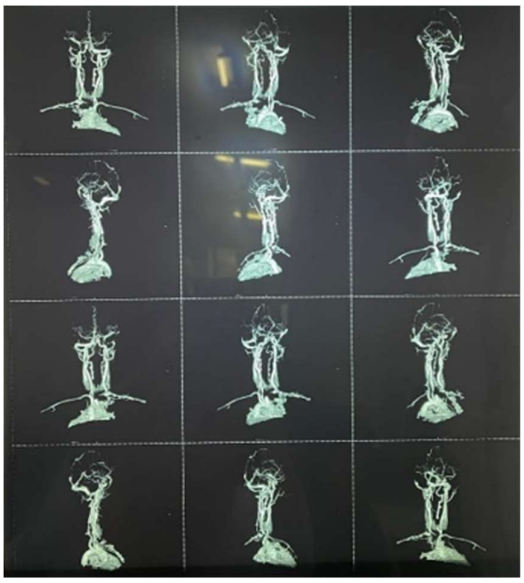

Figure 4. CT- Angiography Examination

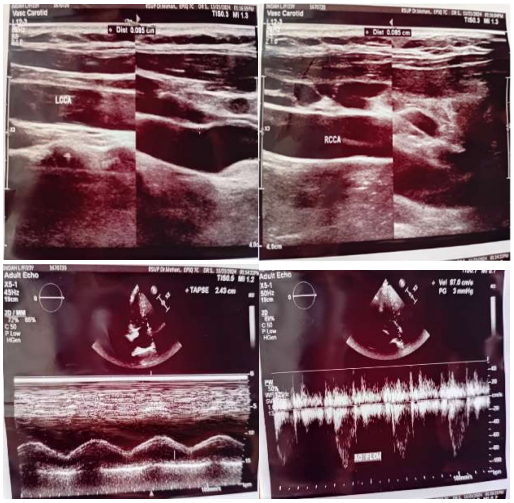

Figure 5. Echocardiography Examination

There were not any abnormalities found in MRI and CT-Angiography examination. Another examination from echocardiography showed any thrombus as well as sec, which was normal result.

DISCUSSION

The patient was consulted because of complaints of the left eye rolling inwards since 3 weeks ago. The patient also complained of double vision. Blurred vision complaints were present. Complaints of white eye spots since 3 months ago were felt. The patient also complained of intermittent headaches, accompanied by complaints of nausea but no vomiting. Other complaints in the eyes such as sore eyes, complaints of red eyes, complaints of eye discharge, complaints of a feeling of obstruction, complaints of watery eyes, complaints of seeing black objects and complaints of seeing rainbows were denied. The patient has a history of weakness in both limbs and numbness in both hands since 1 week ago. Based on anamnesis, the complaints felt by the patient at this time are very likely due to increased ischemia from hypercoagulation. On ophthalmological examination, it was found that the left eye had rolled inwards since 3 weeks ago. The patient was also found to have difficulty moving the eyeballs sideways in both eyes. The patient also found decreased vision in the right and left eyes.

The symptoms obtained in the patient showed signs of disorders or paresis of the abducens nerve or nerve VIth. Ischemia can cause headaches as experienced by patients. Headaches in this condition occur in the morning, and can develop into headaches throughout the day. Complaints experienced by patients are intermittent headaches that can persist throughout the day. Visual disturbances in these patients may also be caused by ischemia, resulting in decreased vision. In patients, there is also an obstruction of eyeball movement laterally which is a sign of a disorder or paresis in the VIth nerve or abducens nerve which can be caused by ischemia. This nerve innervates the ipsilateral lateral rectus muscle. If there is paralysis or paresis of the abducens nerve, it can cause abduction disorders in the ipsilateral eyeball.

The literature states that the eyes roll inward accompanied by outward obstruction and double vision caused by direct and indirect damage. Direct causes include ischemia, meningitis, intracranial tumors, pseudotumors, dural venous sinus

thrombosis, and hydrocephalus can reduce blood flow that supplies nutrients to the VIth nerve. The most common cause is ischemia. One of the main causes is ischemia, especially in patients with vascular risk factors such as hypertension, diabetes mellitus, and atherosclerosis. Ischemic mechanisms result in impaired blood supply to nerves that are susceptible to vascular insufficiency.[3,7,8]

In the supporting laboratory examination, several increases were obtained, namely LDL 106, HDL 39, Hba1c 7.2, BSN 112, BSPP 159, Fibrinogen 375, D-dimer 1.86 which showed signs of dyslipidemia which caused hypercoagulation of the blood. Being one of the risk factors for ischemia in patients.

In patients, the Body Mass Index was also obtained which indicated obesity was also one of the factors for signs of hypercoagulation or dyslipidemia. Obesity increases the risk of hypercoagulation through a number of mechanisms, including increased levels of coagulation factors, decreased activity of natural anticoagulants, chronic inflammation, impaired blood circulation, and damage to the endothelium of blood vessels. All of these factors contribute to the body's tendency to form blood clots more easily, which increases the risk of thrombosis, stroke, pulmonary embolism, and heart attack. Therefore, healthy weight management, increased physical activity, and monitoring underlying medical conditions are essential to reduce the risk of excessive blood clotting in individuals with obesity.

The patient was advised to undergo an MRI examination, the results were: Good cerebral parenchymal diffusion. No infarction/ICH/SOL intracerebri signs were seen on the current MRI of the head. Thickening of the left maxillary sinus mucosa, left ethmoid, right ethmoid, left sphenoid. The right and left nasal conchae were hypertrophic.[6,8] The nasal septum was deviated to the right. There was no sign of mass or abnormalities in the brain and brainstem at this time. The best management in the treatment of hypercoagulation is to give anticholesterol drugs and maintain a healthy diet and lifestyle in patients. The prognosis in these patients is quo ad vitam dubia ad bonam, quo ad functionam dubia ad bonam, quo ad sanationam dubia ad bonam.[9,11]

Generally, the clinical symptoms experienced by patients will disappear or are reversible after the underlying condition can be treated, within 6-12 months but being very delayed can result in delayed intervention, this can cause permanent damage and loss of vision. Therefore, ophthalmologists and neurologists should be aware that decreased vision may be an early sign and the only sign of ischemia. For patients who depend on shunts, periodic ophthalmological examinations should be considered to detect signs of delayed treatment and vision loss can be avoided.

CONCLUSION

The patient was diagnosed with sixth cranial nerve paresis associated with a hypercoagulable state. Following appropriate treatment, clinical improvement was observed. Sixth nerve palsy secondary to acute ischemia generally has a favorable prognosis, with spontaneous recovery typically occurring within 6 to 12 weeks if systemic risk factors are optimally managed. Management focuses on strict control of blood glucose and blood pressure. Symptoms are often reversible. Regular ophthalmologic follow-up is recommended to monitor recovery and prevent recurrence.

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