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Olgu Sunumu

Millard-Gubler Syndrome: A Case Report

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Rebleeding, cerebral vasospasm, hydrocephalus, seizures, cardiopulmonary complications, hypertension, urinary, and fecal incontinence, electrolyte and fluid imbalance are frequently encountered complications of aneurysm, surgical, and endovascular treatment of aneurysm. Neurological deficits secondary to surgery or endovascular coiling are also among these complications. Millard-Gubler Syndrome develops as a result of injury or infarction of the pons at the level of the facial nerve nucleus.In this syndrome facial nerve nucleus, the abducent nerve, and the opposite corticospinal tract fibers are involved. This report describes a patient presenting with severe headache, and generalized seizure to our intensive care unit. Cranial computed tomography was performed and revealed on subarachnoid hemorrhage. After the aneurysm of the left posterior communicating artery was detected in the radiology department, the patient underwent clipping operation in our department the next day. The patient had no neurological deficits after microsurgical clipping treatment till the third postoperative day when sudden right peripheral facial paralysis and diplopia (double vision) developed which was associated with left side hemiparesis, i.e, the right (opposite side of aneurysm). This right-sided Millard-Gubler Syndrome which has not been cited in the literature so far was reported by us.

Keywords: Aneurysm, Millard-Gubler Syndrome, aneurismal subarachnoid hemorrhage, clipping procedure

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Millard-Gubler Sendromu: Olgu Sunumu

Anevrizma ve anevrizma cerrahi ve endovasküler tedavisinin yaygın komplikasyonlarından tekrardan kanama, serebral vazospazm, hidrosefali, nöbet, kardiyopulmoner komplikasyonlar, hipertansiyon, idrar-gaita inkontinansı, sıvı-elektrolit dengesizliğine sık rastlanmaktadır. Cerrahi veya endovasküler olarak koillenmeye bağlı ikincil olarak nörolojik defisitler de bu komplikasyonlar arasında yer almaktadır. Millard-Gubler sendromunda ponstaki fasiyal sinir nükleusu seviyesinde zedelenme veya enfarkt sonucu olarak gelişmektedir. Bu sendromda fasiyal sinir nükleusu, abdüsens sinir nükleusu ve karşı tarafın kortikospinal lifleri etkilenmektedir. Bu makalede, bildirilmiş olan hasta acilimize şiddetli baş ağrısı ve nöbet ile getirilip, bilgisayarlı tomografide SAK belirlenip, DSA'sında sol posterior kommünikan arterin anevrizması saptanmıştır. Ertesi günde cerrahi olarak anevrizması kliplendikten sonra postoperatif 3. gününe kadar nörolojik olarak sağlamdı. Postoperatif 3. gününde sağ periferik fasiyal tutulması, sağ gözüyle çift görmesi ve sol tarafta özellikle alt ekstremitede daha belirgin hemiparezisi ani olarak başlamıştır. Bu sağ Millard-Gubler sendromu (anevrizmanın karşı tarafında) gelişmiştir. Daha önce literatürde rastlanmayan benzeyen olgu tarafımızca bildirilmiştir.

Anahtar kelimeler: Anevrizma, Millard-Gubler sendromu, anevrizmal subaraknoid kanama, kliplenme işlemi

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INTRODUCTION

Successful approach to aneurysmal subarachnoid hemorrhage (aSAH) focuses on prevention and management of secondary complications especially those related to increased intracranial pressure. Decreasing the complications of aSAH remains the most important strategy in trying to reduce mortality and morbidity rates of aSAH. Millard-Gubler Syndrome (MGS) defined as a unilateral lesion of the ventrocaudal pons at the level of the facial nerve nucleus, may involve the basis pontis and the fascicles of VI. and VII. cranial nerves. MGS leads to abducens nerve paresis and a contralateral hemiparesis that often affects the face, while an ipsilateral peripheral facial nerve paresis may also occur when the lesion extends sufficiently laterally to damage the fascicle of the facial nerve [1-3]. This case report describes a patient diagnosed as aSAH then treated by microsurgical clipping. The patient had no neurological deficits after microsurgical treatment, on postoperative third day suddenly right peripheral facial paralysis and double vision developed, and at the same time hemiparesis of the left side was noticed, i.e., the right MGS, which has not been reported in the literature up to now.

CASE REPORT

A 38 year-old female patient presented to our emergency room with severe headache and generalized seizure that was associated with a brief loss of consciousness. After approximately 30 minutes the level of her consciousness gradually improved followed by nausea and vomiting. Apart from smoking 10-15 cigarettes a day, her medical history was unremarkable.

On examination, the patient was well oriented without any neurological deficit. Vital parameters were normal. There was no motor or sensory loss. Nuchal rigidity was positive. Her systemic examination was unremarkable. The patient was evaluated as hunt-hess grade 2.

The cranial CT revealed Grade 3 SAH that evaluated based on Fisher scale and mild hydrocephalus (Figure 1). We admitted the patient to our clinic for further examination and treatment. In the next day right femoral intraarterial digital substraction angiography (DSA) was performed and the aneurysm of the left posterior communicating artery was detected (Figure 2).

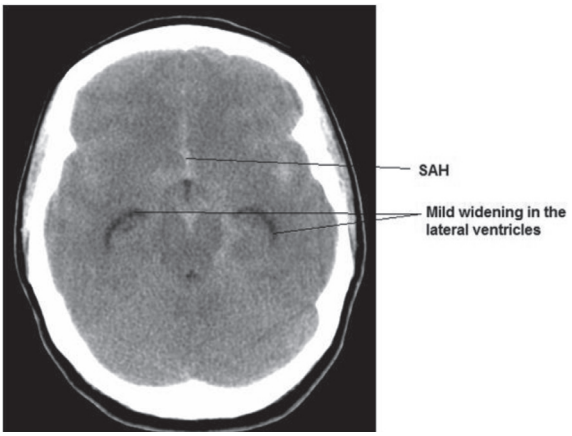

Figure 1. Preoperative cranial CT image shows diffuse SAH, edematous brain and a mild hydrocephalus in lateral venticles.

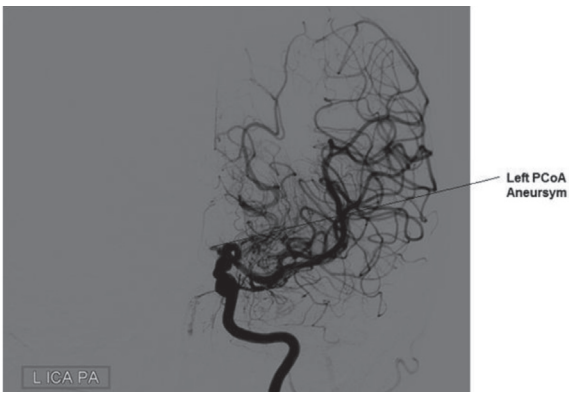

Figure 2. DSA of the patient shows the aneurysm of the left posterior communicating artery.

In the same day, the patient underwent microsurgical clipping operation by pterional craniotomy approach and the aneurysm was clipped using two standard clips without any need for blood transfusion. Postoperative cranial CT was performed which revealed two clips on aneurysm

associated with postoperative changes in operation field such as pneumocephalus, craniotomy defect and subdural effusion. The patient had not any neurological deficit after microsurgical clipping treatment till the postoperative third day when suddenly right peripheral facial paralysis emerged so she could not close her eye fully and diplopia (double vision) in both eyes developed which was associated with limited outward movement of her right eye and 4/5 grade left side hemiparesis i.e, the right (opposite side of aneurysm) MGS. Brain diffusion MR and cranial CT were performed and any pathological lesion was not detected (Figure 3). The patient had been managed with physical therapy and rehabilitation program that included strength training,

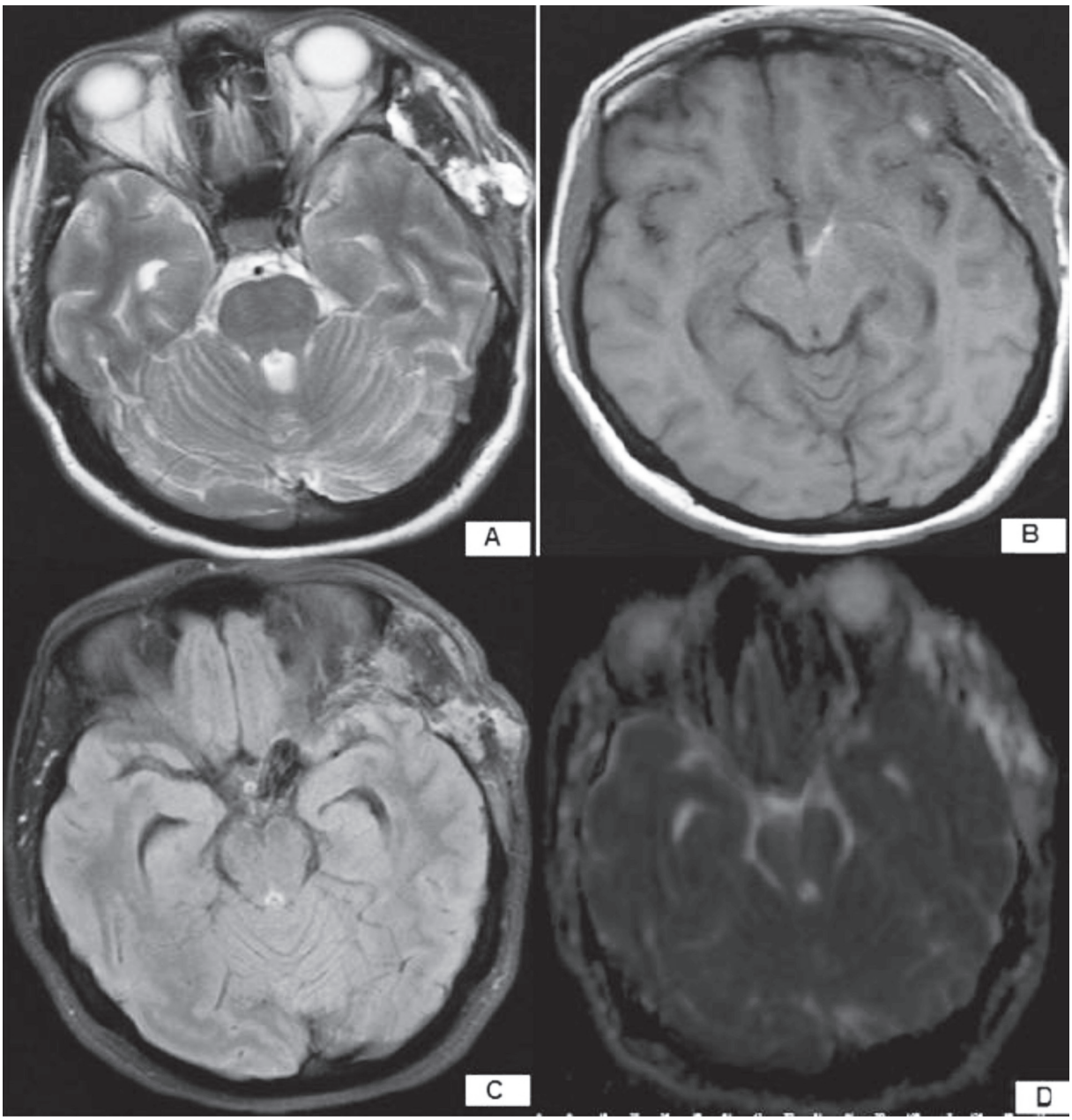

Figure 3. Cranial MRI that performed on the third postoperative day after the MGS of the opposite side clinical symptoms appeared. [A]: Axial sectioned T2-weighted MRI; [B]: Axial sectioned T1-weighted MRI; [C]: Axial sectioned T2-flair MRI; [D]: Axial section diffusion ADC; MRI shows no pathological findings that due to MGS.

balance, and gait exercises. After 14 days of rehabilitation she was capable of walking independently without support and the distal muscles of the left lower extremity were improved to +4/5 strength. The patient was discharged and recommended for clinical control. On follow-up after 24 months palsy of the sixth and seven nerves demonstrated partial recovery without any more complications.

DISCUSSION

MGS (Ventral Pontine Syndrome) is named after two French physicians, Auguste Louis Jules Millard (1830–1915), who first reported one case due to pontine hemorrhage as a letter to the editor in the journal (1855) where Adolphe-Marie Gubler (1821–1879) reported his cases in a medical paper one year later [4]. Gubler instructed the journal editor to give Millard precedence, hence the eponym [4].

The components of MGS are ipsilateral facial and abducens nerve paralysis as a lower motor lesion at the level of cranial nerve nucleus and hemiplegia or hemiparesis of the contralateral limbs caused by the involvement of the corticospinal tract before its crossing over [1,5].

The lesions responsible for MGS are probably located in the basal portion of the caudal part of the pons, which are extensive enough to involve the corticospinal tract and involve the fibers of the abducens and facial nerves [6,7]. Therefore, the lateral inferior and medial inferior pons must be involved together for the the syndrome to become manifest. However, as near the root fibers of the facial nerve there are the medial longitudinal fasciculus, paramedian pontine reticular formation, abducens nucleus, superior cerebellar peduncle, dorsal spinothalamic tract, medial lemniscus and secondary ascending tract of the trigeminal nerve are in the close vicinity of root fibers of the facial nerve [6,7].

The diagnosis of MGS can be made based on either radiological or clinical findings, our case was diagnosed as MGS based on clinical manifestations, whereas MRI did not show the radiological features of MGS (Figure 3). Conservative treatment together with rehabilitation is the treatment of choice for MGS.

CONCLUSION

MGS is usually seen in cases of brainstem tumors, hemorrhage, tuberculoma, parasitic infection, stroke (infarction) secondary to occlusion of the basilar artery, and trauma. Up to now, there was no case reported after operation of clipping an aneurysm or related to aneurysmal SAH.

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