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CASE REPORT

Contralateral facial nerve paresis subsequent to posterior fossa meningioma surgery in a child: case report

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Abstract

Introduction Meningiomas are relatively uncommon neoplasms in the pediatric population and posterior fossa is a very rare location for these tumors. Only a few cases of contralateral cranial nerve deficits have been reported but no cases of pediatric meningioma with contralateral facial nerve paresis have been documented in literature.

Cerebellopontine Angle Meningioma Who Case report We present a 4 year old girl with found postoperative contralateral facial nerve paresis.

Discussion The possible pathogenesis and literature review concerning this complication are discussed. The mechanisms leading to this complication could be distortion of brainstem, traction during resection and subsequent compression of brainstem against the contralateral petrous or tentorium.

Keywords Facial nerve · Cerebellopontine angle · Meningioma · Postoperative complication

Introduction

Meningioma comprises only near 1% of the pediatric age group tumors and posterior fossa meningioma—including CPA area—is even more uncommon [1]. Surgical resection of CPA tumors has been associated with relatively high rate of postoperative complications especially ipsilateral hearing loss and/or facial palsy [7].

Herein, we report a child with CPA meningioma who developed a contralateral 7th palsy subsequent to surgical resection. The clinical course and potential physiopathology of this rare complication are discussed.

Case report

A 4-year-old girl was referred to our department due to a headache, vertigo, gait, and swallowing problems which were progressive during the last few weeks. Neurological examination revealed right facial nerve deficit (Brackman score of 2), IX and X cranial nerve deficit, and tongue atrophy in the right side, associated with mild left side hemiparesis and ataxia. Her brain MRI confirmed a mass of about 2 × 3.5 × 2 cm located at the right side of the medulla with severe distortion and displacement of medulla to the left. The mass was isointense in T1- and T2-weighted images with homogenous enhancement without any ventriculomegaly (Fig. 1).

The patient underwent a right suboccipital craniotomy. There was a firm yellow grayish mass arising from the dura matter between the lower cranial and facial nerves orifices. The tumor was not suctionable and could not be removed by CUSA, but debulking was performed in a piecemeal fashion and finally, gross total resection was accomplished. The histopathological evaluation confirmed classic meningioma. Her postoperative examination confirmed gradual recovery of the left hemiparesis and complete return of the right facial nerve function but sever left side facial paresis was observed just after emergence from anesthesia. New brain MRI showed no remnant of tumor or hemorrhage and the brain stem distortion was relieved after surgery. She underwent physiotherapy for left facial weakness and face asymmetry improved within 1 month.

Discussion

Most neural elements involved with CPA tumors are ipsilateral to the tumor location and contralateral involvement is

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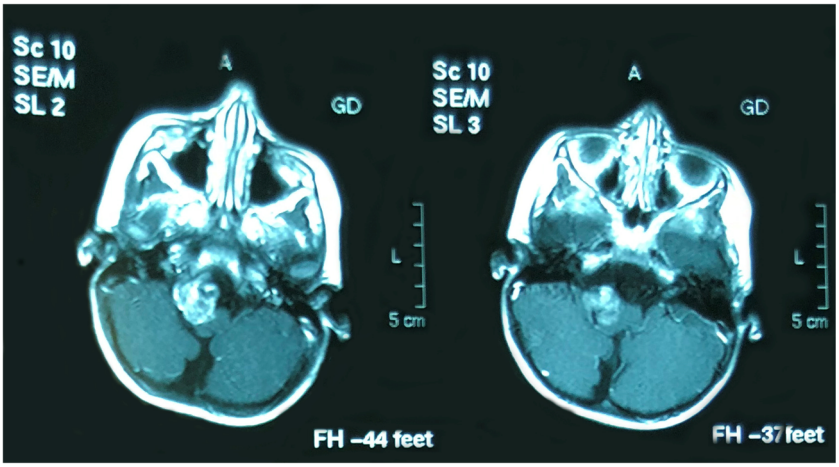

Fig. 1 Axial view T1-weighted image shows bright enhancement of extra-axial mass in right CP angle compressing the brain stem and distorting it to the left and posterior

rare. Contralateral trigeminal neuralgia, hemifacial spasm, facial nerve paresis, and hearing loss have been reported as very rare symptoms of tumors located in the CPA [2, 3, 5, 6, 8].

In the best of our knowledge, no reports of contralateral facial nerve paresis as surgical complication of CPA tumor could be found in literature. The speculations regarding contralateral facial nerve paresis in the current case can be hypothesized as the following:

- Distortion of the brain stem before surgery and rapid relocating after surgical treatment might be a reason for facial nerve paresis.
- Even a gentle traction during surgical resection may cause a compression of the brain stem against the contralateral petrous or tentorium, resulting in entrapment and temporary ischemia of the nerve.
- Since the brain stem had already shifted contralaterally by tumor mass, it is theoretically possible that surgical retraction might cause further dorsal shift of the vascular elements like anterior inferior cerebellar artery loop toward the facial nerve.
- Extracranial stretching of the facial nerve due to positioning for surgery can potentially cause neuropraxia.

Corticosteroid therapy may be helpful [4], and the postoperative contralateral facial nerve deficit in the current case improved over time with conservative management. In most cases with preoperative contralateral cranial nerve deficits, the symptom relieves over time after tumor resection, as well [2]. So, it can be concluded that whatever the cause, this condition usually resolves over time and should be managed conservatively.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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