Vestibular schwannoma case reports

2024

A 79-year-old woman who presented with subacute gait apraxia, cognitive impairment and urinary incontinence. CT and MR imaging identified a 20 mm vestibular schwannoma and communicating hydrocephalus; her cerebrospinal fluid (CSF) - protein was elevated. Her symptoms improved following ventriculoperitoneal shunt insertion. The mechanism by which non-obstructing vestibular schwannoma causes hydrocephalus is unclear, but hyperproteinorrachia is probably important, likely by impeding CSF resorption [1)]

A rare case of a vestibular schwannoma manifesting as trigeminal neuralgia (TN). Intracranial tumors can have a variety of orofacial pain symptoms. Among benign cerebellopontine angle tumors, vestibular schwannoma is the most common cause of a TN-like manifestation. Although the most common symptoms of a vestibular schwannoma are hearing loss and vestibulopathy, the unique feature of this case was the manifestation of symptoms consistent with TN.

Case description: The patient had right-sided episodic facial pain that was short in duration and severe in intensity. The initial differential diagnoses included short-lasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing and TN. As part of the routine evaluation, the patient was referred for brain magnetic resonance imaging, which revealed a right-sided vestibular schwannoma. The patient was prescribed 200 mg of gabapentin 3 times daily and was referred to neurosurgery for excision of the schwannoma. Surgical excision resulted in complete resolution of pain.

Practical implications: This case illustrates the importance of interdisciplinary treatment and how it can lead to an optimal outcome for a patient with complex orofacial pain symptoms [2)]

2021

Transition of a vestibular schwannoma to a malignant peripheral nerve sheath tumor with loss of H3K27 trimethylation after radiosurgery-a case report and review of the literature [3)]

A 63-year-old gentleman who had right-side severe sensorineural hearing loss on MRI showing a right cerebellopontine angle tumor (volume 4.96 cm3) with an internal acoustic meatus extension. He underwent GKRS with the prescription dose of 12 Gy to the 50% isodose line, covering 4.66 cm3 (i.e., 94%) of the tumor. Ten days later, he experienced a symptomatic intra-lesional hemorrhage with a mass effect over the brainstem. When symptoms did not resolve after an initial conservative approach, he underwent surgical decompression of the lesion. Postoperatively, the patient had facial palsy but was free of disabling vertigo and ataxia. At the 6-month follow-up, he was doing well without any other complaints. Although rare, an intralesional bleed can occur after GKRS in Vestibular Schwannoma and should be suspected when new severe symptoms develop immediately after

therapy [4].

Stereotactic radiosurgery (SRS) is commonly used for the treatment of vestibular schwannomas given its high rate of tumor control and low rate of complications. Facial nerve palsy has been reported several months after treatment as a rare late complication of SRS. Here, we report a case of facial weakness occurring only 4 days after treatment and discuss potential etiology and management considerations [5].

A 38-year-old man with various pigmented lesions and history of juvenile nasopharyngeal angiofibroma, vestibular schwannoma, and cleft lip and cleft palate is described. Characteristics of patients with coexisting juvenile nasopharyngeal angiofibroma and vestibular schwannoma are summarized. A search, using PubMed, was performed for the following terms: acoustic, angiofibroma, blue, cleft, combined, dysplastic, juvenile, lip, nasopharyngeal, neuroma, nevus, palate, schwannoma, and vestibular. The relevant papers were obtained and their references were reviewed. Only one man with coincident juvenile nasopharyngeal angiofibroma and vestibular schwannoma has previously been described. The juvenile nasopharyngeal angiofibromas were both right-sided and diagnosed when the patients were 13 years old and 20 years old. Our patient's vestibular schwannoma was ipsilateral with his juvenile nasopharyngeal angiofibroma and incidentally diagnosed on a magnetic resonance imaging (MRI) scan that was performed to monitor for recurrent juvenile nasopharyngeal angiofibroma when he was in his 30s. The other man's vestibular schwannoma and juvenile nasopharyngeal angiofibroma were diagnosed concurrently, when he was 20 years old. The observation of a patient with cleft lip and cleft palate, various melanocytic nevi, juvenile nasopharyngeal angiofibroma, and vestibular schwannoma is unique. Although the appearance of juvenile nasopharyngeal angiofibroma and vestibular schwannoma may be coincidental, the occurrence of these tumors in the same individual may suggest an association with regards to their pathogenesis [6].

Evangelista-Zamora et al. presented a case of a mid-sized vestibular schwannoma (T3b according to the Hannover Grading Scale) that was resected through a retrosigmoid transmeatal approach in semisitting position under endoscopic assistance. The patient is a 52-year-old male with acute loss of functional hearing on the right side. Audiometry confirmed a loss of up to 60 dB and lost speech discrimination, there were no associated symptoms such as tinnitus or vertigo.

A 2D video demonstrates positioning, OR set-up, anatomical and surgical nuances of the skull base approach and the operative technique for microdissection of the tumor from the critical neurovascular structures, especially the facial and cochlear nerves. A gross total resection was achieved and the patient discharged home after four days with unaltered function of the facial nerve (HB I). At one year follow up there was no indication of residual or recurrence. In summary, the retrosigmoid transmeatal approach is an important and powerful tool in the armamentarium for the microsurgical management of all kinds of vestibular schwannomas. Provided the necessary anesthesiological precautions and intraoperative procedures the semi-sitting position is safe and effective. If needed, the approach can be complemented by the use of an endoscope for visualization of the distal internal auditory canal. The link to the video can be found at: https://youtu.be/pPKT4_5nIn0 [7].

A 31-year-old man with a 7-year history of tinnitus, dizziness, and hearing loss. The patient had a subtotal resection of a 2.5 cm right-sided vestibular schwannoma via retrosigmoid craniotomy at an outside hospital. He was referred for further surgical resection due to the increased size of the tumor on surveillance magnetic resonance imagings (MRIs) and worsening symptoms. MRI showed a residual/recurrent large schwannoma with extension to the full length of the internal acoustic canal and brain stem compression. He underwent microsurgical gross total resection via a translabyrinthine approach. The facial nerve was preserved and stimulated with 0.15 mA at the brainstem entry zone. He awoke with House-Brackmann grade III facial function, with an otherwise uneventful postoperative course. In this video, microsurgical techniques and important resection steps for this residual/recurrent vestibular schwannoma are demonstrated, and nuances for microsurgical technique are discussed. The link to the video can be found at: https://youtu.be/a0ZxE41Tqzw [8].

A young man with cystic fibrosis in his early 30s presented to accident and emergency with acute onset unilateral lower motor neuron facial palsy, hearing loss and impaired balance following Mycobacterium abscessus eradication induction therapy. The hearing loss and impaired balance developed over a 3-day period prior to the onset of facial palsy. Further investigation with a CT scan and MRI scan led to a diagnosis of vestibular schwannoma. The facial palsy resolved with steroid treatment; however, the hearing loss is irreversible, which has had a profound impact on his life and career. This case is intriguing as the cause and association of events are unclear. A working diagnosis of incidental Bell's palsy and unilateral hearing loss caused by the vestibular schwannoma was applied. However, the onset of these symptoms in relation to M. abscessus eradication induction therapy promotes discussion [9].

Kritikos et al. encountered a case of DAVF associated with an octreotide-positive vestibular schwannoma. A 46-year-old female had symptoms of right ear congestion accompanied by pulsatile tinnitus and mild hearing loss. Magnetic resonance imaging (MRI) identified a lobulated mass centered at the cerebellopontine angle. Preoperatively, on cerebral angiography, there was an incidental discovery of a DAVF in the right posterior fossa. The decision was made to proceed with resection of the tumor in a staged fashion. Her latest follow-up MRI showed no evidence of recurrent tumor. This is the second reported case of DAVF associated with an intracranial schwannoma. Findings are discussed along with a thorough review of the literature. This case, combined with the data from the literature review, led us to believe that tumor-related angiogenesis might contribute to DAVF formation [10].

2015

Temporal bone invasion by VS is extremely rare. A 51-year-old man who revealed temporal bone destruction beyond IAC by unilateral VS. The bony destruction extended anteriorly to the carotid canal and inferiorly to the jugular foramen. On histopathologic examination, the tumor showed typical benign schwannoma and did not show any unusual vascularity or malignant feature. Facial nerve was severely compressed and distorted by tumor, which unevenly eroded temporal bone in surgical field. Vestibular schwannoma with atypical invasion of temporal bone can be successfully treated with combined translabyrinthine and lateral suboccipiral approach without facial nerve dysfunction. Early

detection and careful dissection of facial nerve with intraoperative monitoring should be considered during operation due to severe adhesion and distortion of facial nerve by tumor and eroded temporal bone [11)]

A 15-year-old male who presented with hearing loss due to a small left-sided vestibular schwannoma (VS) not associated with neurofibromatosis type 2 (NF2), which had been apparent for six months. Magnetic resonance imaging with gadolinium diethylenetriamine penta-acetic acid revealed a mass, 10 mm in diameter, located in the left inner auditory canal. The patient had no family history of NF2 and gene mutation analysis showed no signs of the condition. Small sporadic or non-NF2 VS is extremely rare and the treatment decision-making process is complicated in children when considering the implications for the impairment of childhood development and lifelong disability. Following careful consideration, the patient in the present study underwent treatment with stereotactic radiosurgery. The five-year post-operative follow-up examination showed tumor stability without additional neurological deficits and at the time of writing the patient was alive and well [12)].

1)
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