

## Case Report

### **A case of intraparenchymal occipital lobe Schwannoma in Shiraz, Southern Iran**

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#### **Abstract**

One case of intraparenchymal Schwannoma of right occipital lobe is presented (first report of occipital lobe Schwannoma). The radiological and pathological features of this rare tumor are discussed, and the current theories for etiology of these intraaxial nerve-sheath tumors are reviewed.

**KEY WORDS:** Schwannoma, brain neoplasm, occipital lobe.

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The "Schwannoma" is a common neoplasm, presumably derived from Schwann cells in the peripheral nervous system. There are 35 reported cases of intracerebral Schwannoma (table 1)<sup>1,2</sup>. Haga et al (1997) reported a case of parietooccipital lobe Schwannoma in a 15-year-old girl presenting with epileptic seizure<sup>1</sup>. Subsequently, Schwannoma of the torcula presenting as an occipital mass, was reported by Horgan in 1998<sup>2</sup>, but this is the first report of occipital intraparenchymal Schwannoma.

#### **Case report**

The patient was a 30-year-old man who presented to the Outpatient Department of Nemazee Hospital of Shiraz University of Medical Sciences due to minor head trauma. The only positive finding in physical examination was left homonymous hemianopia in visual perimetry. There were no physical findings or family history in favor of neurofibromatosis.

Brain CT scan with contrast showed nonhomogenous well demarcated right occipital intraparenchymal lesion with surrounding edema and collapse of right occipital horn of the lateral ventricle with minimal midline shift. Although a preoperative diagnosis could not be clearly established, the tumor was removed via right occipital craniotomy. The dura was slightly tight. After opening of the dura, it was turned over the sagittal and transverse sinuses, and then corticectomy was made on parietooccipital fissure. We reached the mass in depth of 1 cm. The mass was found to be a cystic lesion with well defined border, containing thick yellowish fluid. The patient did not have any new neurological deficit and the patient was discharged 3 days later. Pathologic findings are presented in figures 1-4.

#### **Discussion**

Intracranial Schwannomas represent 7% to 8% of primary brain tumors but the majority of

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**Table 1.** Frequency of reported cases of intracerebral Schwannoma

Place	Frequency
Parietal lobe	8
Frontal lobe	8
Temporal lobe	7
Cerebellum lobe	3
Sella turcica	2
Multiple lesions	2
Olfactory groove	1
Pons	1
Medulla	1
Fourth ventricle	1
Occipital (Present study)	1

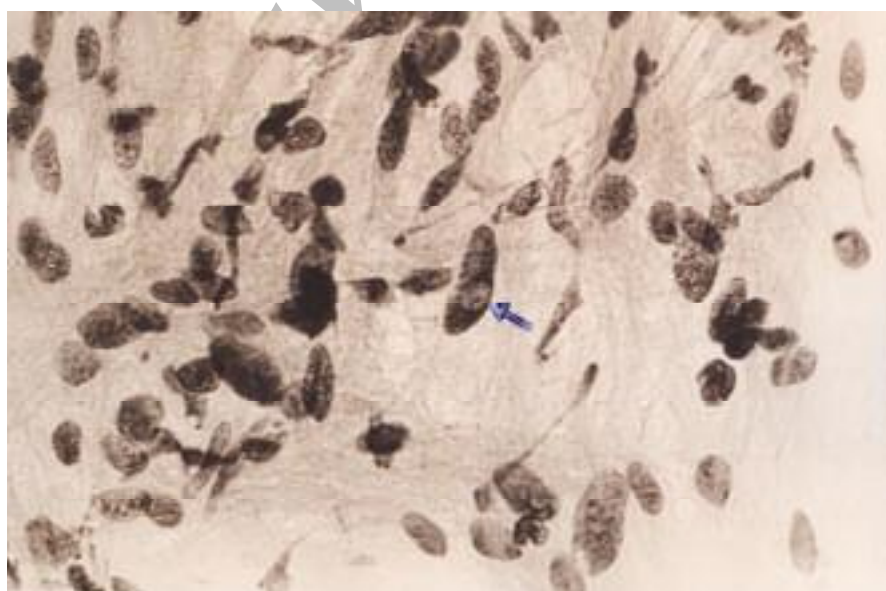
them arise from the vestibular component of the 8th cranial nerve <sup>3,4</sup>. The mean age of patients affected by this tumor was reported to be 20 years or younger <sup>5</sup>. As Schwann cells are not normally found in the brain or spinal cord pa-

renchyma, intraparenchymal Schwannomas are unusual. Here, the intraparenchymal nature of the tumor was confirmed by radiological and pathological findings as well as explorative surgery.

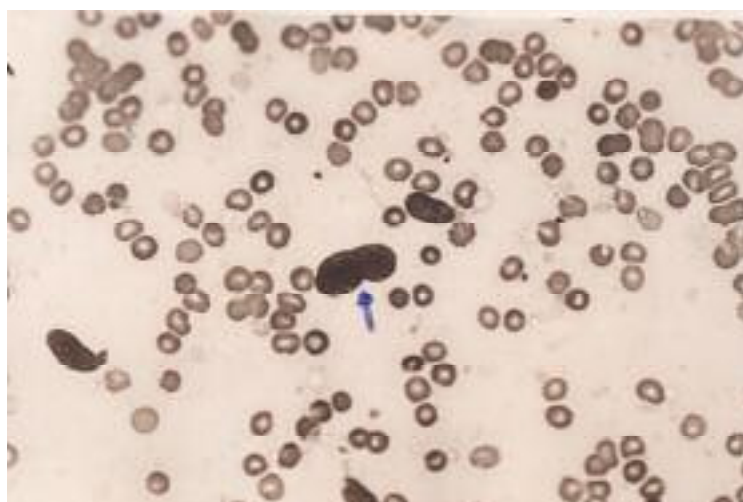
There are still debates on histogenesis of intraneuraxial Schwannoma and various theories have been suggested. These theories include the presence of Schwann cells along the perivascular nerve plexus, myelinated fibers with Schwann cells in the brain substance as a hamartomatous malformation, differentiation of multipotential mesenchymal elements in CNS into the Schwann cell, and disordered embryogenesis, as most of these tumors were reported in younger age groups <sup>3-7</sup>. Although none of these imaging characteristics on computed tomography were pathognomic for Schwannoma, these findings would help raise suspicion of this type of tumor when a brain lesion is encountered.

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**Figure 1.** Crush cytology preparation from intraoperative biopsy, Giemsa stain  $\times 400$ : scattered ovoid to elongated bare nuclei, were observed while one of them had a distinct intracytoplasmic inclusion.



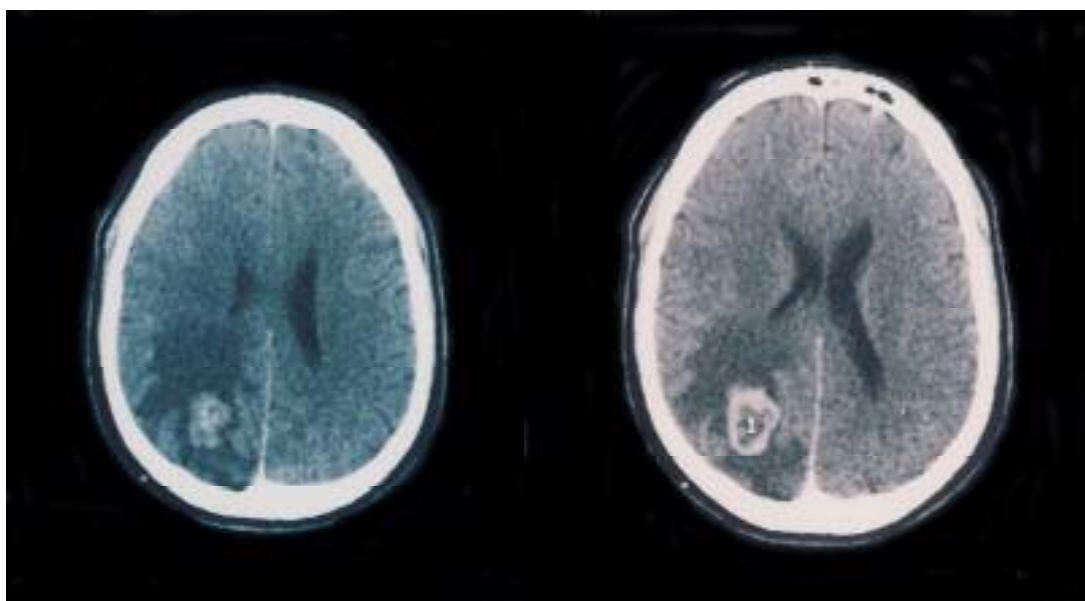
**Figure 2.** Touch preparation from intraoperative biopsy, Giemsa stain  $\times 400$ : the provided smears showed one large and twisted bare nucleus. This cytomorphology was typical of Schwannoma.



**Figure 3.** Crush preparation, Giemsa  $\times 400$ : smear showed distinct verocay bodies.



**Figure 4.** A moderately cellular intracranial tumor, (H & E  $\times 100$ ): the cell nuclei were in oval or spindle shape.



**Figure 5.** Right occipital schwannoma.

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