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Case Report

Post traumatic schwannoma over right temporo-zygomatic region: a case report

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ABSTRACT

Schwannomas are benign tumour. Post traumatic schwannoma over head and neck region is a rare entity. The occurrence of head and neck schwannomas is approximately 25-50%. The most common site of occurrence of schwannoma in head and neck region is found to be lateral part of neck. Schwannoma is a radio-resistant tumour. Complete surgical excision is the definitive management. The characteristic histopathological finding in Schwannoma is Antoni A area and Antoni B area of cellularity and Verocay bodies. We report a rare case of post traumatic schwannoma over right temporo-zygomatic region in an 18-year-old female.

Keywords: Antoni A, Antoni B, Head and neck tumors, Post-traumatic Schwannoma

INTRODUCTION

Schwannomas are benign tumors that typically arise from the perineural Schwann cells which are responsible for the production of the insulation layer called Myelin sheath. They can arise from cranial nerves (except olfactory and optic), spinal nerves and autonomic nervous system. They may develop at any age but are most common in younger to middle aged adults but unclear gender predisposition.[1] They are relatively slow growing masses with a strong predilection for sensory nerves. Schwannomas are usually benign. However, less than 1% can turn into malignant (neurofibrosarcoma). There are 25-50% of schwannomas occurring in the head and neck area.[2] Though the majority of the schwannomas are idiopathic, trauma is suggested as a factor in papers written by Wilkinson et al and Brody et al in vertebral fracture and thyroidectomy, respectively.[3,4] In more than one third of all solitary neurilemmomas head and neck region is the site of origin and they most commonly occur in the lateral part of the neck.[5] The other sites in the head and neck region are the parapharyngeal space, retropharyngeal space, posterior pharyngeal wall, para-nasal sinuses, nasal cavity, scalp, sub-mandibular region, larynx, epiglottis, tongue, infratemporal fossa, cheek, oral cavity.[6] Post traumatic schwannoma over face is extremely uncommon. Schwannomas may also be associated with certain syndromes, such as neurofibromatosis type 2, schwannomatosis in certain cases.[7]

Diagnosis is mainly based on histopathological examination which typically shows solitary, well-circumscribed, encapsulated lesion. Characteristic features include Antoni A and Antoni B areas. The Antoni A area comprises spindle-shaped Schwann cells within an interlacing fascicle. The Antoni B area comprises a loose meshwork of gelatinous and microcytic tissue with large, irregular spaced, thick-walled vessels. On immunohistochemistry (IHC), an S-100 protein is strongly expressed by most cells of schwannoma along with vimentin and myelin. In this report, we present a rare case of post traumatic schwannoma over the right temporo-zygomatic region.

CASE REPORT

An 18-years-old Hindu, unmarried female, student by occupation and belonging to lower socio-economic class residing in Nakhatrana district of Kachchh presented to ENT OPD of a tertiary care hospital with a complaint of swelling over right-side temporo-zygomatic region for 3 years. The swelling was asymptomatic before but patient noticed gradual increase in size since past 2-3 months. In the past she had a history of head trauma before 10 years. She had no other comorbidities and no other addiction history present. On inspection of the swelling, a globular swelling of size 5.5×2.5 cm over right temporo-zygomatic region with regular and smooth surface, skin over it being non erythematous and non-edematous, skin surrounding it being non edematous and non-erythematous, no discharge or abnormal pulsations seen and no dilated veins present. On palpation, a globular swelling of size 5.5×2.5×1.5 cm, non-tender, mobile with smooth surface, well demarcated, regular margins, firm in consistency, not fixed to underlying bone, non-fluctuant, non-trans-illuminant, non-reducible, non-compressible and no pulsations felt over it. On percussion, a dull note was heard and on auscultation, no bruit was heard. There was no surrounding lymphadenopathy.

On ultrasound imaging of swelling well defined heterogeneously hypoechoic lesion of size 29×12 mm noted with internal echoes and without internal vascularity noted in subcutaneous planes at local site of swelling over right preauricular region p/o benign cyst-epidermal inclusion cyst. On aspiration with a wide bore needle, few drops of blood were seen. Cytosmears were hemorrhagic and FNAC was inconclusive. So computed tomography of swelling was done which revealed a well-defined hypodense lesion (average HU 20-25) of size 5.4×1.4×2.7 cm without internal vascularity seen in subcutaneous plane in right zygomatic region superficial to temporalis muscle. On MRI correlation there was no evidence of diffusion restriction findings suggestive of benign cystic lesion. There was focal thinning with focal bony dehiscence of 1.8 cm seen involving right parietal bone. There was soft tissue thickening seen at site of dehiscence.

Surgical excision of the mass was planned under general anesthesia (GA). One-unit packed cell volume of blood was preserved preoperatively for any emergency need. A skin crease incision was given over the prominent part of the swelling. A reddish brown, encapsulated cystic lesion was visualized. The swelling was dissected from the surrounding structures. The globular mass was excised in toto. Significant intra operative bleeding was seen. Postoperative period was uneventful. The post operative histopathological (HPE) report revealed Antoni type A and Antoni type B areas (Figures 2 & 3). Antoni type A area is a hypercellular dense area and Antoni type B area is a hypocellular faint dull area and also has wavy nuclei which represent the neural origin of the tumour. HPE might also reveal the palisading of the nuclei around a central mass of cytoplasm (Verocay bodies). The two types (Antoni A and Antoni B) may also be mixed. On 1 year follow up, there was no local site recurrence.

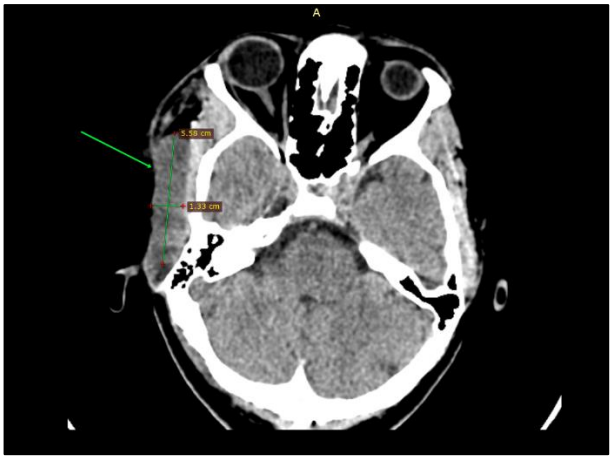

Figure 1: Axial section of CT showing a well-defined hypodense lesion (the arrow) in subcutaneous plane in right zygomatic region superficial to temporalis muscle.

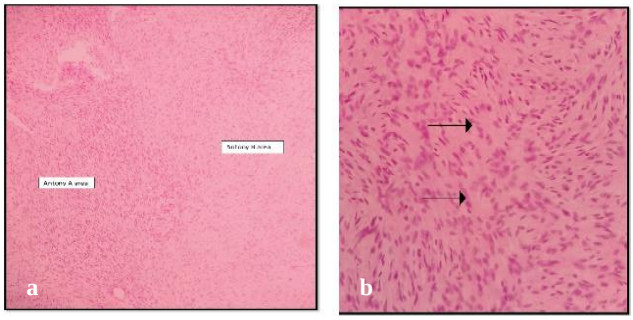

Figure 2: Histopathological image in 40X (H & E) showing (a) hypercellular (Antoni A area) and hypocellular (Antoni B area) and (b) verocay body formation (shown by black arrows.

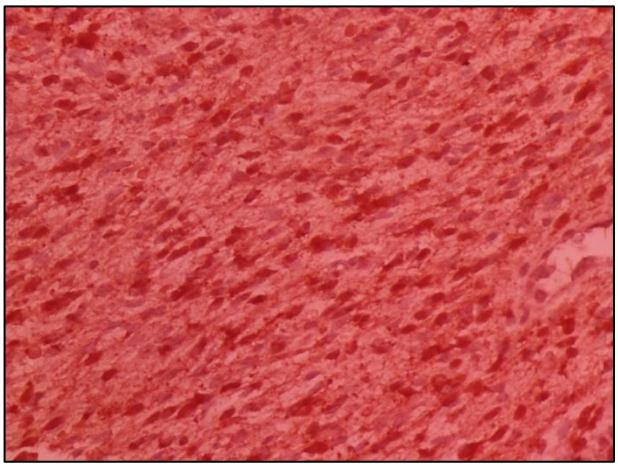

Figure 3: IHC stain (s100, 40X) shows strong and diffuse positive staining in tumor cell.

DISCUSSION

The preoperative diagnosis of schwannomas in the head and neck region is difficult. Most of the investigations, like FNAC, are inadequate. Generally, FNAC is effective in differentiating benign and malignant tumours of soft tissue, however, it has a low accuracy in the diagnosis of neural tumours.[9] Computerized tomography with contrast enhancement (CECT) is advisable to be routinely done to identify vascularity. On CT and MRI studies, the schwannomas usually appear as spherical or ovoid soft tissue mass and may show moderate to marked contrast enhancement.

Also, some cystic component may be seen and fatty degeneration may sometimes be seen. The differential diagnosis of these tumours must include metastatic or reactive lymphadenopathy, soft tissue neoplasms like fibroma, leiomyoma and lipoma, paraganglioma, carotid artery aneurysm, branchial cleft cyst, angioma, and other neurogenic tumours.

The treatment is complete surgical excision of the benign tumour. Recurrence after successful en-bloc removal of the tumour is very rare by Khanna et al.[10] Hatzoitis and Aspirides reported tongue to be the most common site intraorally followed by palate, floor of mouth, buccal mucosa, gingiva, lips and vestibular mucosa.[11]

Schwannoma of cheek was reported by Muranjan and is the only reported case of cheek schwannoma.[12] Less than 1 percent of schwannomas can occur in nose and paranasal sinuses and in such case trans-nasal endoscopic approach can be followed for surgical management.[8] The Schwannoma is a radio-resistant tumour and the possibility of its malignant conversion is extremely rare. Radiotherapy should be reserved for palliation when the surgical management is not possible or contraindicated.

CONCLUSION

Extracranial schwannomas (post traumatic) which most often present as asymptomatic solitary masses, are rare tumours. The preoperative diagnosis may usually be difficult and is often made after the surgery. The definitive diagnosis relies on clinical suspicion and histopathological confirmation. Complete surgical excision with appropriate approaches is the treatment of head and neck schwannomas. The possibility of nerve injury should be kept in mind. Local recurrence is extremely rare.

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