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Transzygomatic anterior infratemporal fossa approach and high cervical approach for resection of infra temporal fossa and parapharyngeal space solitary fibrous tumours.
Report of 2 cases and review of literature

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ABSTRACT

The infratemporal fossa (ITF) is the region under the floor of the middle fossa giving passage to most major cerebral vessels and cranial nerves.(1) It is closely related to important adjacent regions such as the middle fossa, pterygopalatine fossa, orbit, and nasopharynx.(2) Due to the anatomical complexity in the ITF, surgical removal of the lesions in or around it is still challenging.(3) Since the 1960s, many surgeons have reported various surgical approaches. the preauricular transzygomatic approach via a transcranial route was reported to be used for exposure of the antero-superior portion of the ITF (2,3). Solitary fibrous tumours (SFTs) were first described by Klempere and Rabin in 1931 as spindle-cell tumours originating from the pleura.(4) With the exception of myopericytoma, infantile myofibromatosis and HPC-like lesions of the sinonasal tract showing myoid differentiation, all other HPC like lesions are best considered as subtypes of SFT.(5) Only a few cases of SFT have been described in the literature involving the skull base and parapharyngeal space.(6–8) The purpose of this article is to show anatomical dissections involving this surgical approach and to evaluate our surgical experience using it.

FIRST CASE

45 yr old female presented with swelling over left cheek without any neurological deficit. MRI revealed left middle cranial fossa base lesion extending into infratemporal fossa. Patient underwent surgery by left anterior infratemporal fossa approach and gross total excision of lesion. Postoperatively patient developed left V3 dysesthesia, which improved over a period of one month. Biopsy- solitary fibrous tumor

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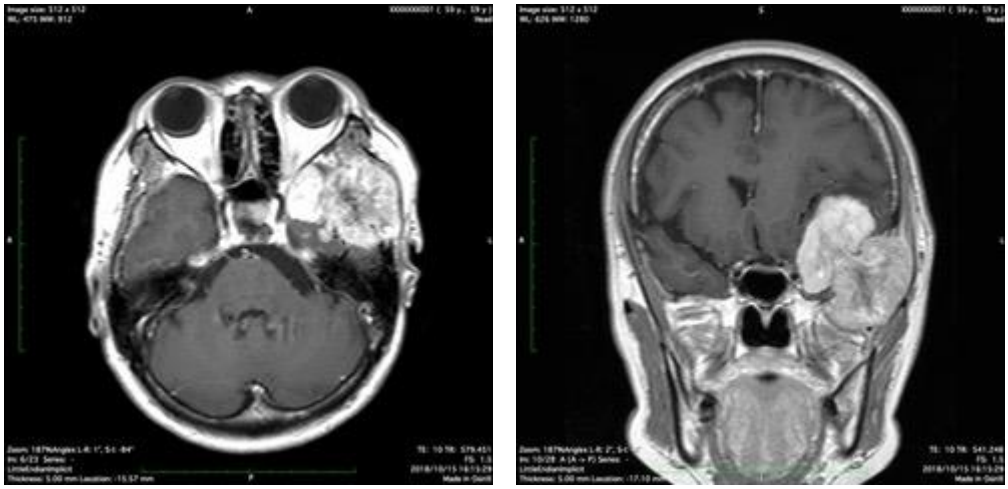
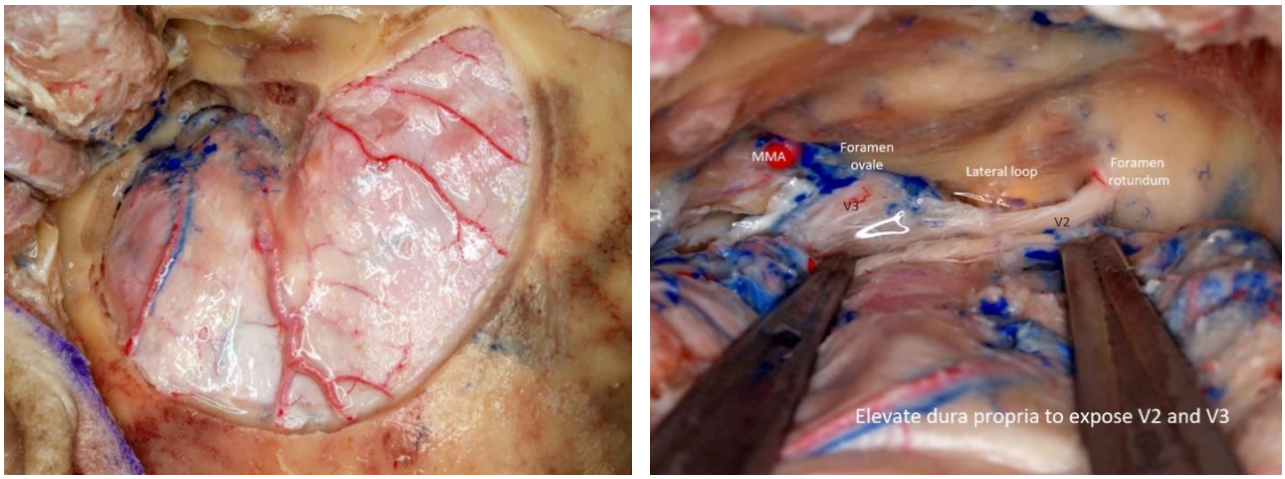
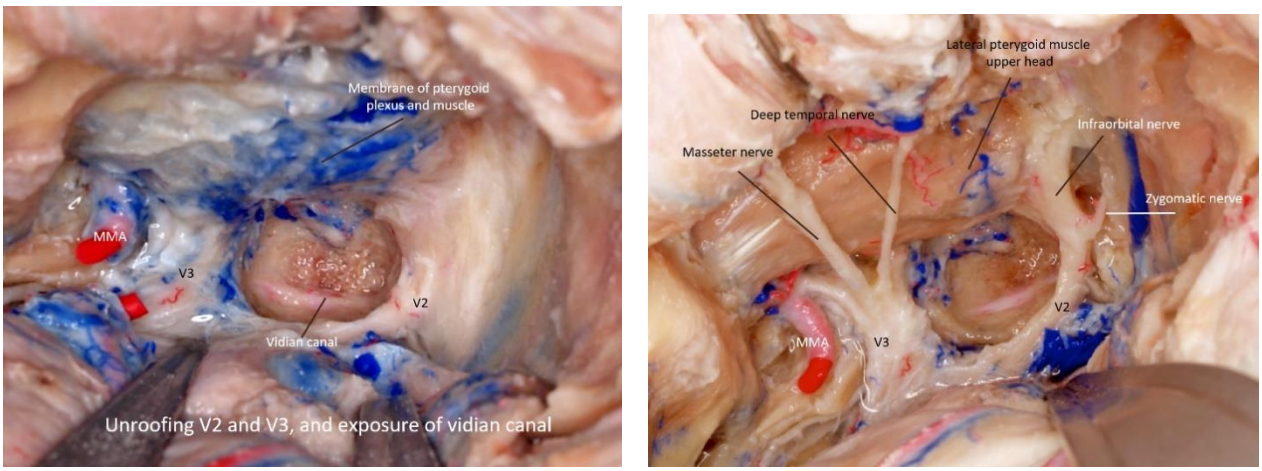


Figure 1: MRI images showing infratemporal fossa tumor with extension into middle cranial fossa.





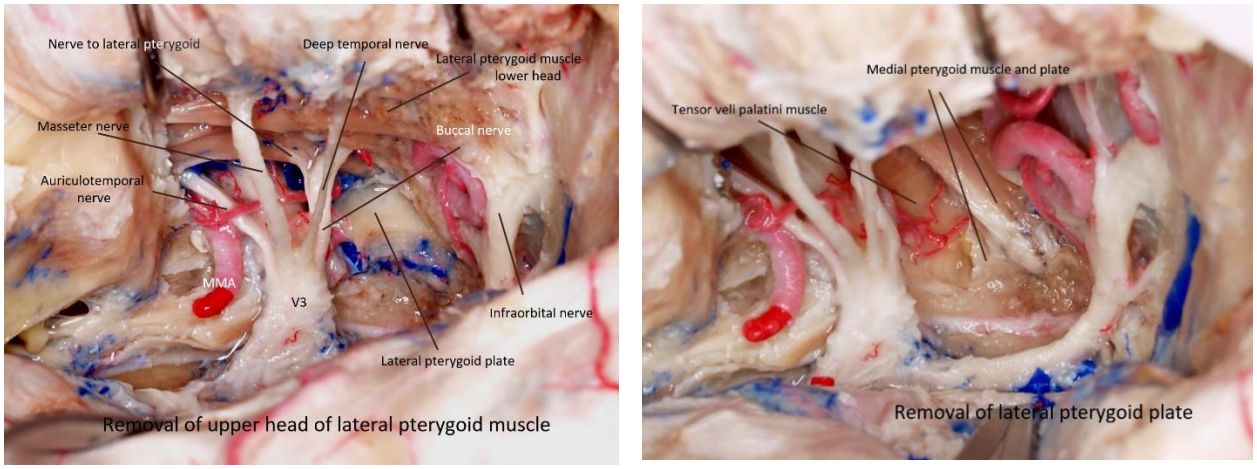
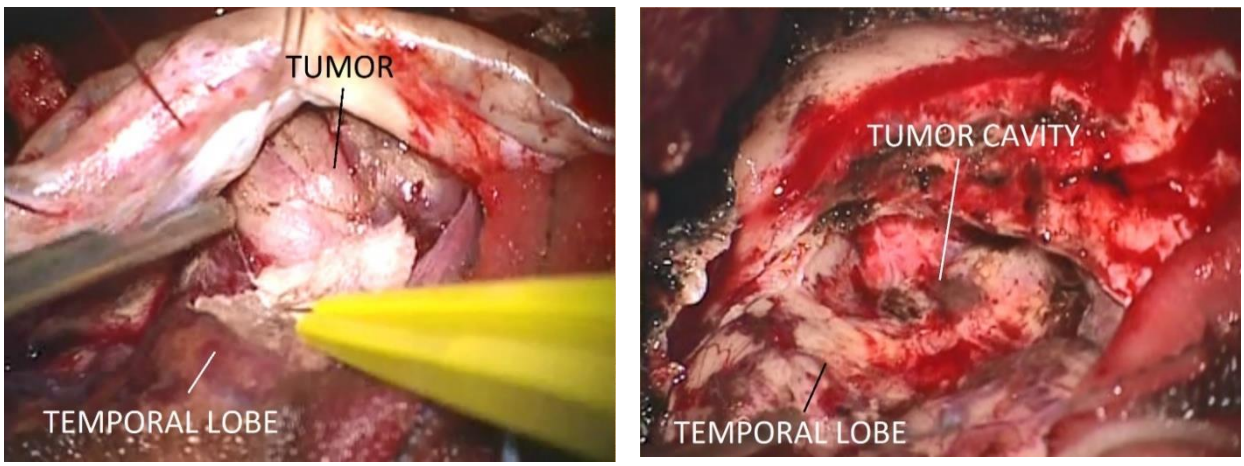
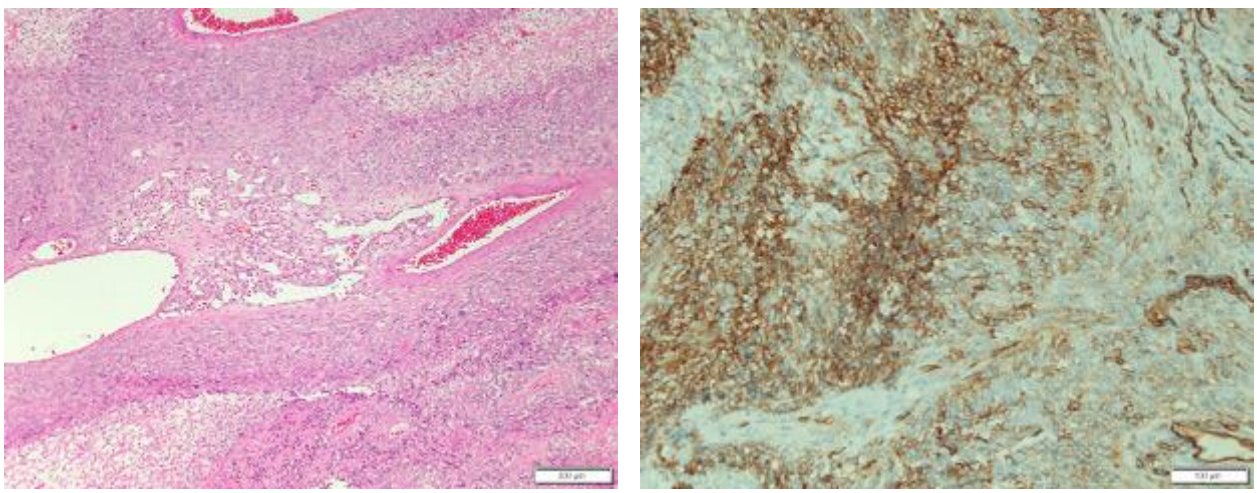
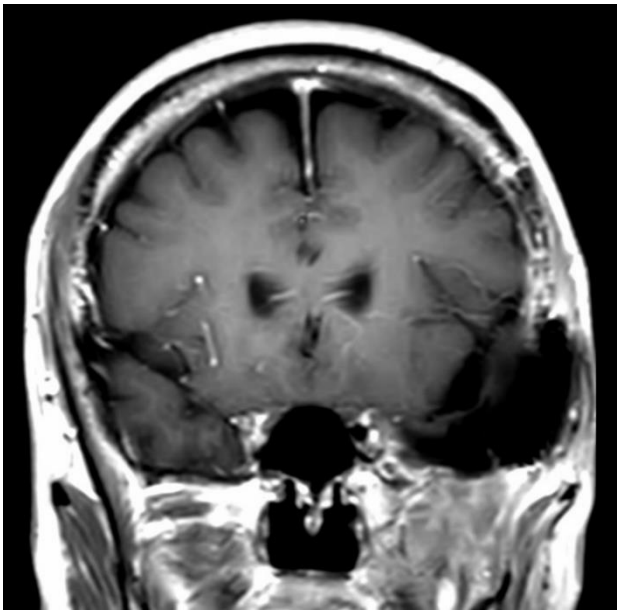


Figure 2: (A-F). A) Frontotemporal craniotomy with elevation of zygomatic arch.

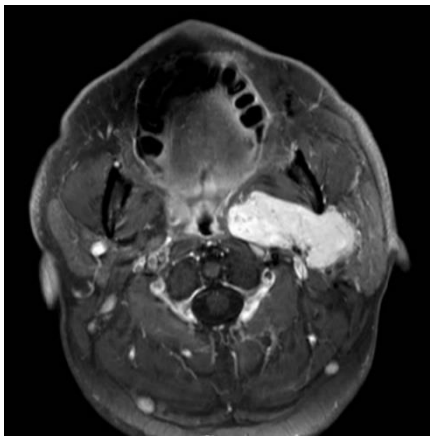


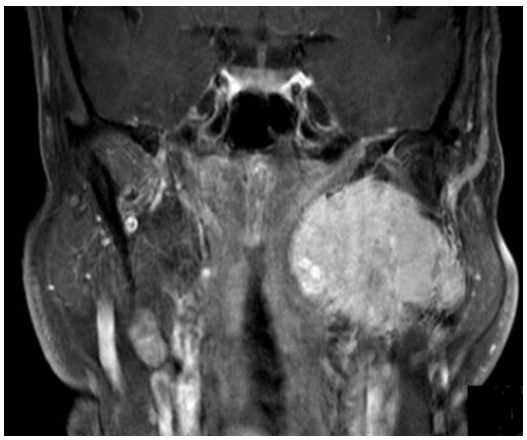


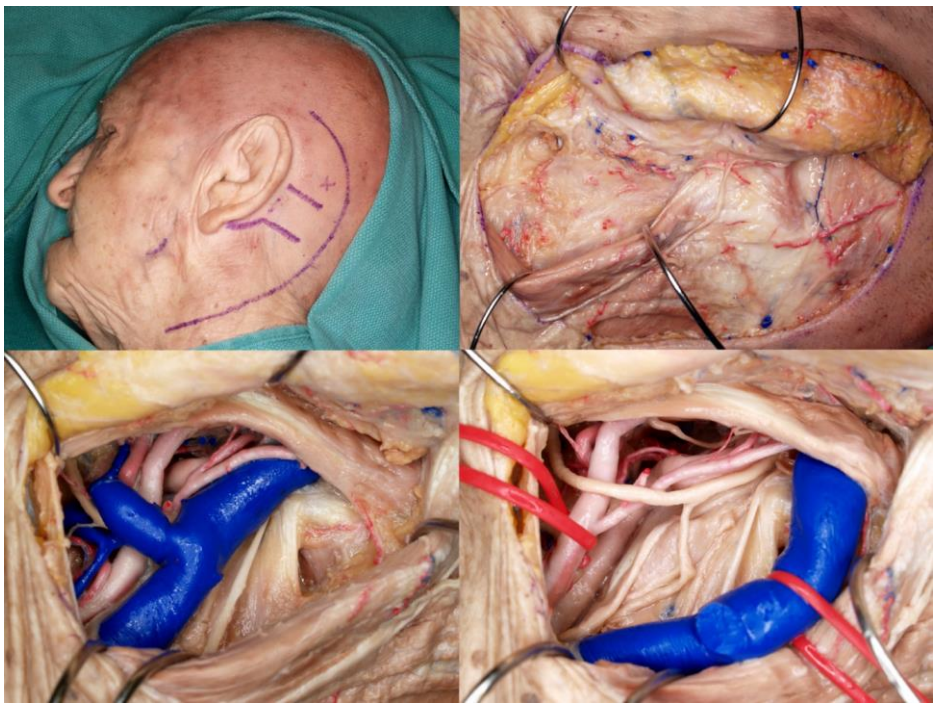


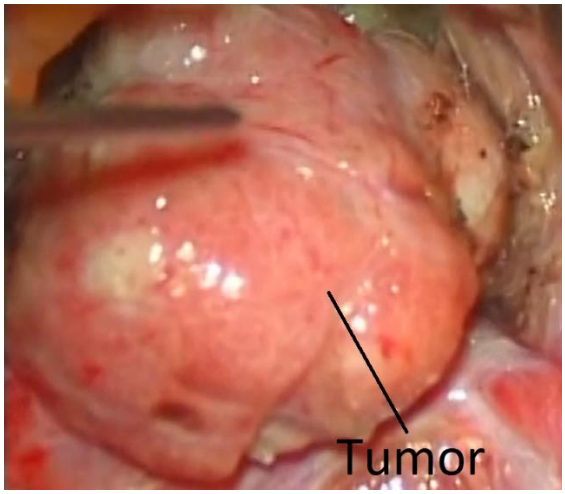
Second case

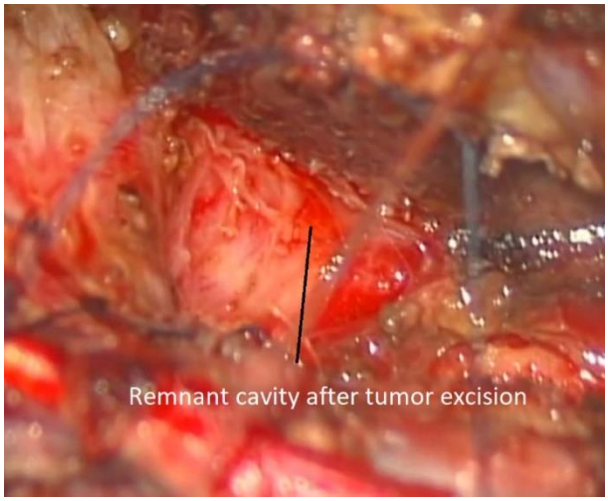
38-year-old male presented with left infra auricular swelling without any neurological deficit. MRI revealed left parapharyngeal space tumor. Patient underwent surgery by high cervical approach and gross total excision of tumor. Biopsy – solitary fibrous tumor.

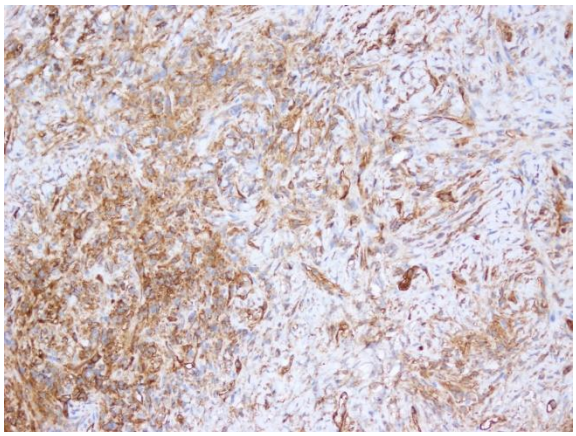


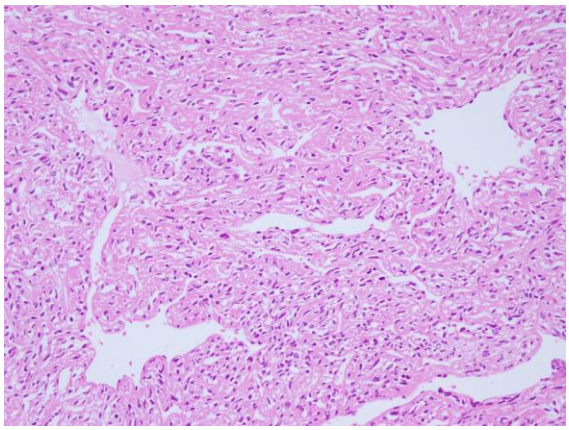


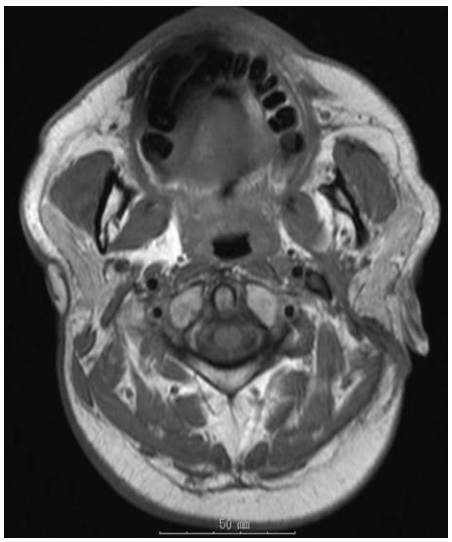


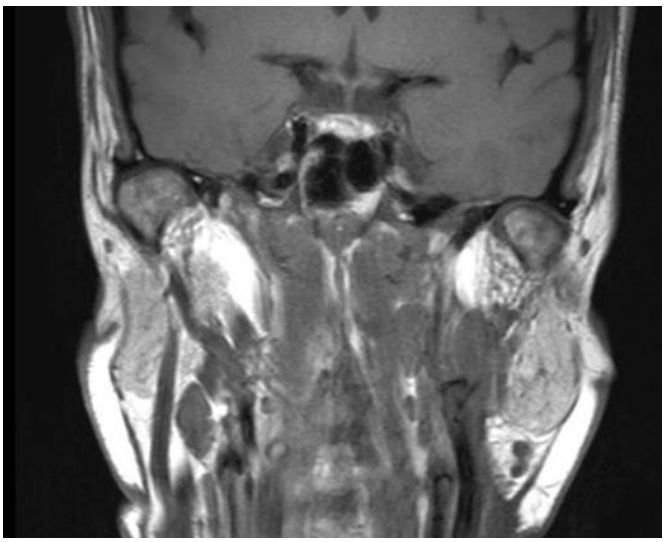












Discussion

Most cases of soft tissue SFTs occur in the early fifth decade of life.(9). Its occurrence is less than 2% of all soft tissue tumours.(9)

A study conducted by Demicco et al of 110 cases found about 32% to be in the abdomen/pelvis, 32% to be pleural, 16% in the extremities, 12% in the trunk, and 12% in the head and neck.(10)

Skull base SFTs may include a wide variety of symptoms, although they are usually asymptomatic

on presentation.(11)

The symptoms manifest most frequently as a slowly expanding painless mass. SFTs from any site are usually benign and surgical resection alone is Curative.(12,13)

The presence of infiltrative margins with surrounding tissues, high mitotic count (≥4 mitoses per 10 high-power high fields) of cellular pleomorphism and tumour necrosis also suggests malignancy.(9,12)

The main treatment is surgical for benign and malignant SFTs. But when histopathology suggests malignancy or when there are positive surgical resection margins, radiotherapy must be discussed, as for other sarcomas.(9,14)

Parapharyngeal space tumours are a rare neoplasm, comprising less than 0.5–1% of tumours of the head and neck. SFT is very uncommon but should be part of the differential diagnosis in patients with a skull base lesion. Diagnosis is difficult but pathologists should be aware of the classical finding of this disease consisting of spindled cells in a disorganized pattern, with alternating hypocellular and hypercellular areas separated by hyalinized collagen. Immunophenotyping staining positive for the presence of CD34 and Bcl-2 can be useful.

Most important prognostic factor in patients with solitary fibrous tumour is completeness of resection. The pioneers of the ITF were Conley [6] and Barbosa [3].

A variety of surgical approaches to the ITF have been developed. variations include anterior (transfacial, transmaxillary, transoral, and transpalatal), lateral (transzygomatic and lateral infratemporal), or inferior (transmandibular and transcervical) approaches.

Fukushima et al. developed a classification of ITF approaches into three types: anterior, middle, and posterior ITF approaches.

Transcervical approach for parapharyngeal space is the easiest approach for resection of these tumors.(15).

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