

Infra-temporal Fossa Growth; Excision with Surgical Expertise and Less Morbidity : A Case Report

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ABSTRACT: Neoplastic lesions of infra-temporal fossa are presented with variegated pathologies. Lesions that involves the infra-temporal fossa more often originate as a result of extension from neighbouring structures and from primary tissues of fossa as well. Metastatic lesions are also common. Because of its enshrouded location, usually tumors presents lately. Clinical signs and symptoms are incidious. The close proximity of the area to the intra-cranial structures, the orbit, the paranasal sinuses, the nasopharynx, and the facial area demand meticulous surgical excision. Modern imaging techniques have made three-dimensional visualization of the extent of the pathology possible. Radical tumor excision with preservation of the quality of life remains the ultimate goal. We report a rare presentation of infra-temporal fossa growth. The patient underwent surgical excision and had uneventful recovery.

Key Words : Infra-temporal fossa, Radical tumor excision.

INTRODUCTION : The infra-temporal region because of its obscure location is inaccessible for clinical examination. Thus lesions other than malignant rapid growth pattern type may continue their growth for longer period and symptoms appeared late. Radiological investigations are usually first to diagnose the disease¹. Various pathologies have been experienced in this area. Treatment of infra-temporal growth depends upon the type and extension of disease. Basic aim is to clear the disease radically with less morbidity¹⁻³. Primary tumors of infra-temporal fossa include fibrosarcoma, haemangioma, Hodgkin's lymphoma meningioma, neurofibroma, rhabdomyosarcoma. Benign tumors include lipoma, meningioma, fibroma and schwannoma. Malignant tumors include adenoid cystic, adenocarcinomas and fibrosarcoma¹⁻⁵. Literature review showed that Conley, Shapsshay and Shaheen provided evidence that majority is of primary tumors²⁻⁸. Adenoid cystic carcinoma is the most commonly occurring malignant tumor. Indolent growth pattern leads to delayed diagnosis and late presentation. Signs and symptoms occurred according to the spread of tumor to surrounding structure i.e. nasal, ear and facial symptoms etc⁵⁻⁶. Approaches to infra-temporal fossa are multiple and needs surgically experience hand. Prognosis is highly influenced by the nature of disease and completeness of

the resection³⁻⁵.

CASE REPORT : 22 years old male presented to us with restricted mouth opening and difficulty in chewing for last three months. He is also complaining of reduced hearing from right ear for the same duration. His history was not significant for any other symptoms. Upon examination he was young, healthy, active and well oriented male. His other systemic examination was unremarkable. His local examination showed right ear conductive deafness and trismus with mouth opening one finger breadth. Other examination was unremarkable. His base line haematological investigations were normal. His CT showed soft tissue mass in right infratemporal fossa, 3.8x4.6x4.7 cm in AP,CC,TR dimensions. It was involving masticator muscles with loss of muscle plane. Anteromedially it was causing destruction of lateral pterygoid plate and, laterally extending to right maxillary sinus thinning of ramous of mandible due to bony erosion. Mass was also extending in to pterygomaxillary fissure to reach the lateral wall of right nasal cavity and superiorly it was abutting the base of right middle cranial fossa, inferiorly involving pterygoid muscles, posteriorly abutting the para pharyngeal fat and parotid gland. The mass lesion show no significant enhancement. The findings were suggestive of neoplastic lesion of infratemporal fossa. Surgical



Figure-1 : C.T Scan coronal view.



Figure-2 : C.T Scan saggital view.

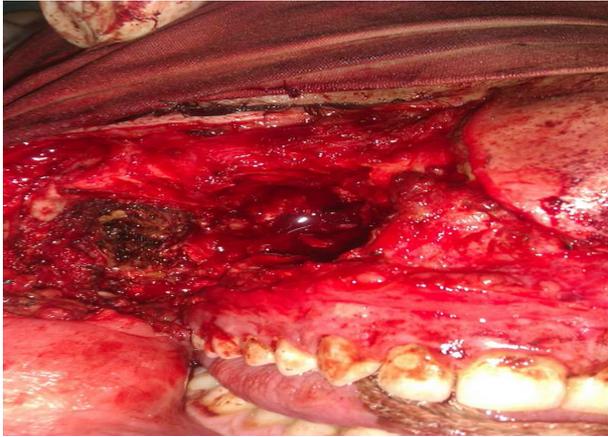


Fig-3 : Per-operative view of the region.

excision was planned. Informed consent have been taken. Patient underwent excision of growth via anterior transfacial approach using Weber Ferguson incision. Mass was extending from lateral pterygoid plate to maxillary sinus, nose lateral wall and abutting right middle cranial fossa. Lesion was resected completely but not in toto as the growth was firm. Mass removal was not easy because of extension to surrounding vital structures and bleeding. Lesion was cleared from its lateral, posterior, anterior and medial margins until normal tissue reached. Middle cranial fossa was also saved and no major vessel bleeds. It was not a vascular growth. After resection cavity was packed. Post-operative recovery was uneventful and patient was followed on regular basis. The histopathology report showed fibroma, benign growth of infra-temporal fossa. Patient recovered completely and he was on regular follow-up with repeat CT scans and showed no recurrence. Patient symptoms were also improved. Mouth opening size increased, hearing and chewing improved.

DISCUSSION : The infra-temporal fossa is an irregularly shaped cavity, situated below and medial to the zygomatic arch. Boundaries involved anteriorly, by the infra-temporal surface of the maxilla and the ridge which descends from its process, posteriorly, by the articular tubercle of the temporal and the spina angularis of the sphenoid, superiorly, by the greater wing of the sphenoid below the infra-temporal crest, and by the under surface of the temporal squama, containing the foramen, which transmits the mandibular branch of the trigeminal nerve, and the foramen spinosum, which transmits the middle meningeal artery inferiorly, by the medial pterygoid muscle attaching to the mandible, medially, by the plate and laterally, by the ramus of mandible, which contains the mandibular foramen, leading to the mandibular canal through which the inferior alveolar nerve passes. This also contains the lingula, a triangular piece of bone that overlies the mandibular foramen antero-medially. Finally, the mylohyoid groove descends obliquely transmitting the mylohyoid nerve the only motor branch of the posterior division of the nerve. Muscles found in this area are lower part of the temporalis and masseter muscles (origin of masseter muscle: lower margin of the inner surface of zygomatic bone insertion: outer surface

of the ramus of the mandible) lateral and medial pterygoid muscles. Internal maxillary artery branches found within the infra-temporal fossa including inferior and deep artery. Pterygoid venous plexus is found there¹⁻⁵. Nerves involve mandibular nerve, inferior alveolar nerve, lingual nerve, buccal nerve, chorda tympani nerve, and otic ganglion⁷⁻⁹. The foramen ovale and foramen spinosum open on its roof, and the alveolar canals on its anterior wall. At its upper and medial part are two fissures, which together form a T-shaped fissure, the horizontal limb being named the inferior orbital, and the vertical one the pterygomaxillary⁴⁻⁶⁻⁹. Approaches to temporal fossa are multiple and involve surgical expertise. Approaches includes anterior trans-facial approach using Weber Ferguson incision, transorbital, transpterygoid, transantral, transpalatine extended maxillectomy, maxillary swing, transoral via gingivolabial sulcus, pre-auricular transzygomatic, transcranial, transmandibular facial degloving, pre-auricular transtemporal, recently endoscopic approach are also gaining popularity³⁻⁵. Prognosis of disease is depended upon the final histopathology of tissue. In this case a young male presented with huge extensive growth but fortunately turn out benign and resected completely with good prognosis. The important aspect is the per operative surgical technique used to clear disease and the patience to clear it completely saving all vital surrounding structures.

CONCLUSION : Infra-temporal growth is difficult to handle per operatively because of the vital surrounding structures. It needs surgically experience hand to excise completely and providing less morbidity to patient. In this case what we found is the late presentation, extensive but benign lesion. Not easily but resectable completely with gentle care and skilled techniques per operatively.

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