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Astrocytoma: A Case Report and Review of Literature in Oral and Maxillofacial Surgery.

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Abstract: *Low grade astrocytomacomprises app. 15% of all primary brain tumours but reporting of Astrocytoma in Oral and Maxillofacial surgery department is not common. This paper is about a journey of a boy with a chief complain of facial deformity. History and examination revealed absence of zygomatic arch with pain on right side of TMJ, headache with nausea and vomiting,weight loss and frequent episodes of seizures. This paper also tries to address the controversy of surgical treatment strategy for low grade astrocytoma.*

Keywords: *Astrocytoma*

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I. Introduction

Reporting of Astrocytoma in Oral and Maxillofacial surgery department is not common. This interesting case report is about a boy who had chief complain of facial deformity after hitting football! Eventually the diagnosis process leads to the low grade diffuse astrocytoma (grade II).

Low grade astrocytoma (LGA) comprise app. 15% of all primary brain tumours [1]. Theannual, global, age-standardized incidence of primary malignantbrain tumours is app. 3.7 per 100,000 for men and 2.6 per 100,000for women [2]. The median age at the time of diagnose is approximately35 years, which is somewhat lower than patients diagnosedwith more malignant forms of glioma[3].The 5-year overall survival (OS) and progression-free survival(PFS) rates in randomized studies range from 58% to 72% and 37%to 55% respectively [4].

As per Ruiz J, Lesser GJ, Seizures are the most common presentation and may be partialor generalized.[5]

II. Case Report

A 14 years old male patient presented at our department of oral and maxillofacial surgery, of Guru Nanak Dental College and Hospital, Kolkata complaining of facial deformity on the right side of face and mobile teeth of upper right arch since two year.

It was noted that from last two years he had mobility of teeth on right upper jaw with frequent episodes of fever. Then a year back he was hit by a ball on the right side of the face while playing. At that time he noticed bleeding from his mouth and nose. Since then he noticed the facial deformity. After 8 months he had pain on right side of TMJ on opening and closing, discharge of pus intraorally, tinnitus over both ears, headache with nausea and vomiting and significant weight loss. These symptoms increased gradually over 6 months of period with frequent episodes of seizures.

On Extra oral examination facial asymmetry with hollowing on the right side was present. On palpation there was absence of zygomatic arch and TMJ movements over right side were absent.

Lymph nodes – level 1b, 2, 3 & 5 (right & left) – lymph nodes were palpable, was non tender, mobile, and non-matted.

Intra orally, there was presence of high arched palate with anterior open bite. Sinus tract was present distal to 17 &27 with no pus discharge. Maxillary segments from premolar to molar region on both sides were mobile. Posteriorly the palate was thinned out.

CT scan revealed absence of zygomatic arch, condyle and pterygoid plates of right side. Lesion was involving infratemporal region bilaterally.

MRI revealed hypointense mass arising from brain.

Fig 1 : Clinical image of the patient

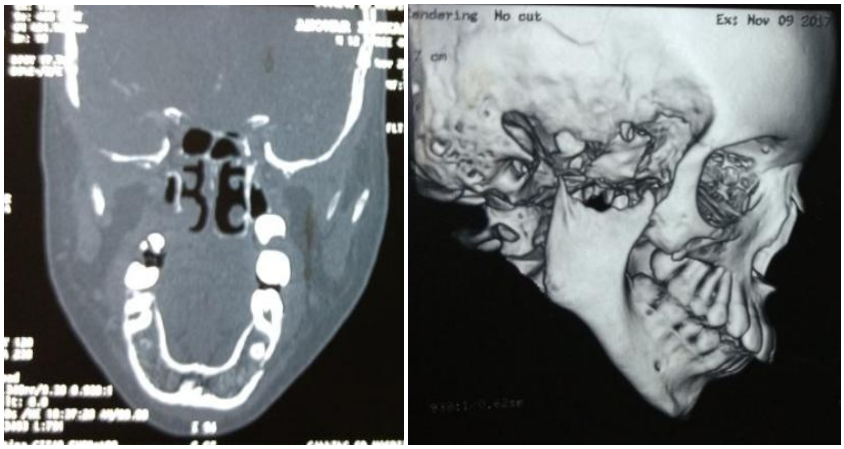

FIG 2. NCCT showing absence of zygomatic arch on right side

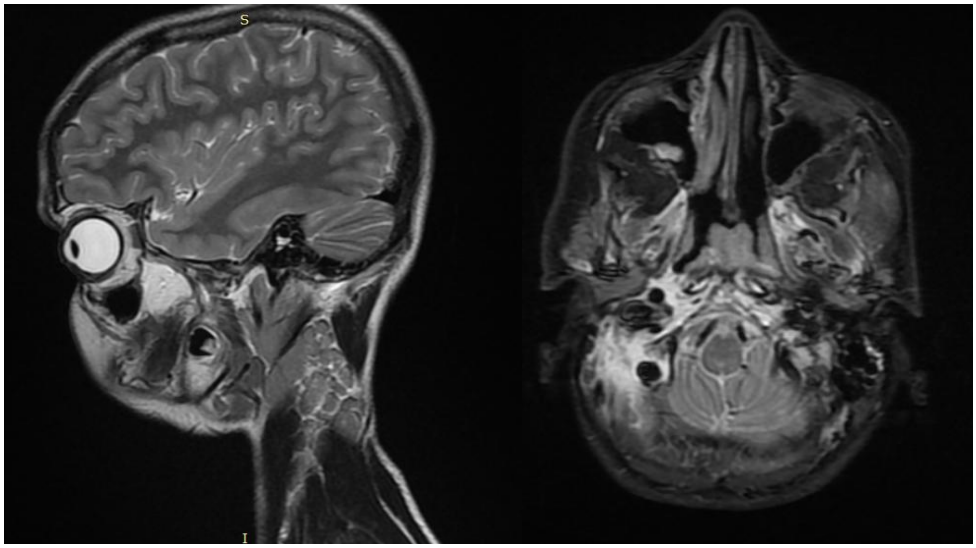

FIG 3.MRI showing the lesion arising from the brain

Earlier FNAC was done which suggested a predominance of histiocytes within the lesion.
We took a biopsy from the infratemporal region via supratemporalis approach and a LN from level 5. Histopathology suggested of ganglioneuroblastoma with negative lymph nodes. Then IHC was done with markers chromogranin A, GFAP, Ki67, NSE, synaptophysin which suggested of Diffuse Astrocytoma (grade 2). The patient was then sent to the Department of neurosurgery for further evaluation.

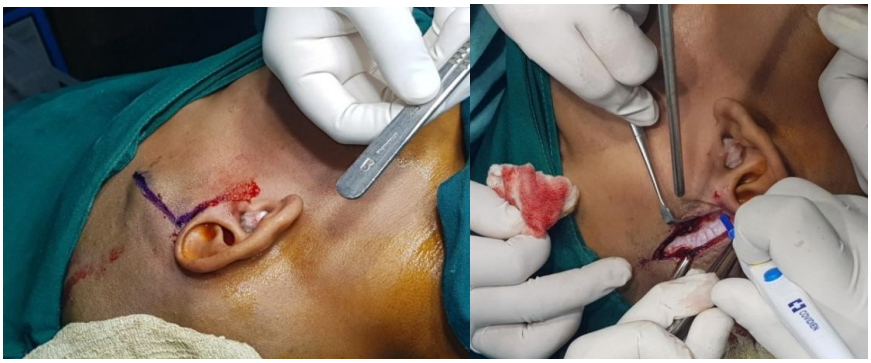

Fig 4 : A- supratemporalis incision given for biopsy

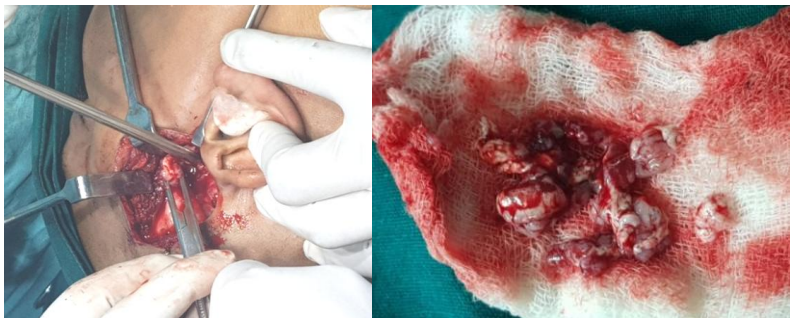

Fig. 5 – specimen taken from infratemporal region

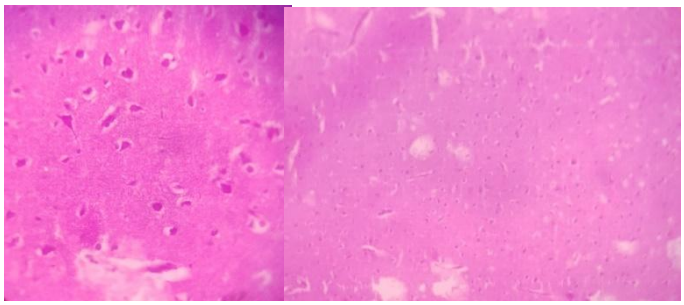

Fig.6 - histopathology of the specimen

III. Discussion

Theremay be two predominant classes of brain stem tumors:1) focal, discrete, sometimes exophytic lesionsassociated with a favorable prognosis, and 2) classic,diffusely infiltrative lesions known for their relentlessgrowth, resistance to radiotherapy and chemotherapy,and bleak prognosis. According to Paul G. Fisher eal al,the "diffuse" lesions belong to the family of fibrillaryastrocytomas (FA), including well differentiated astrocytoma(WHO Grade 2), anaplastic astrocytoma (WHOGrade 3), and glioblastomamultiforme (WHO Grade4).[6]

Extracranial bone metastases from astrocytoma are rare. Zu-Gui Li, MM et al, proposed thatwhole-body FDG PET/CT imaging with inclusion of brain shouldbe incorporated into the diagnostic algorithm.[7]

Radiacal surgery or not ?

There is no consensus about the strategy of surgical treatment of LGA. There have been no prospective trials, randomizingpatients between biopsy only and gross total resectionto determine the benefit of extensive resection on outcome in lowgradegliomas.

According to McGirt et al and in another separate study by Smith et al opined that gross tumour resection is associated with a delayin tumour progression and malignant degeneration as well asimproved overall survival. Ahmadi et al. also found beter overall survival but suggested that it will not improveprogression-free survival.Kilic et al. reported tumour recurrence inpartial resection cases.

A review and meta-analysis by Sanai and Berger also concludedthat more extensive surgical resection is associated with longer lifeexpectancy, both in high- and low-grade gliomas.In general, the current literature

supports the theory that radicaltumour resection is preferable in terms of yielding better OS as wellas PFS compared to subtotal resection, partial resection and biopsy only.

According to Mariani et al. radical resection is not always possible due to because of infiltration ofeloquent areas and they were onlyable to achieve >90% resection in 10% of the treated patients. According to them smaller preoperative tumour volume waspositively correlated with smaller postoperative tumour volumeand with longer OS. Thus, it is recommendable to perform surgicalresection before the tumour volume increases, as this predicts aworsened outcome.[8]

The threesteps treatment –

According to Duffau et althe patient first underwentpartial resection due to infiltrative growth of the tumour. After this,the patient received chemotherapy which enabled regression ofthe contralateral growth and allowed a postchemotherapy surgerywith complete resection without sequelae. [9]

Aarsen et al evaluated low-grade asstrocytoma in 38 children and showed that sixtyonepercent of children presented with neurologic orendocrine impairments. Forty-five percent of all children had long-term mild or severe disabilities andrequired special education or remedial teaching.Children who have pilocytic or low-grade astrocytomahave a high survival rate and, from an oncologicpoint of view, a good prognosis. However, at long-termfollow-up, they display impairments, disabilities,handicaps, and a low QOL, depending on tumor site,age, and disease recurrence. Children who are diagnosedin adolescence are especially vulnerable interms of social problems. More important is that childrenwithout deficits may develop severe cognitive,social, and behavioral deficits years after diagnosisbecause of the phenomenon of "growing into deficit."[10]

Compliance with Ethical Standards:

CONFLICTS OF INTREST – NIL

INFORMED CONSENT WAS TAKEN FROM THE PATIENT.

Reference

[1]. Sanai N, Chang S, Berger MS. Low-grade gliomas in adults. Journal of Neurosurgery2011;115November 5

[2]. Bondy ML, Scheurer ME, Malmer B, Barnholtz-Sloan JS, Davis FG, Il'yasova D,et al. Brain tumor epidemiology: consensus from the Brain Tumor EpidemiologyConsortium. Cancer 2008;113October 7

[3]. JalloGI,Benardete EA,(January 2010)Low-Grade Astrocytoma (http:// medicine. medscape.com/article/1156429-overview).Archieved 27 July 2010.

[4]. Pallud J, Capelle L, Taillandier L, Fontaine D, Mandonnet E, Guillevin R, et al.Prognostic significance of imaging contrast enhancement for WHO grade IIgliomas. Neuro-oncology 2009;11April 2

[5]. Ruiz J, Lesser GJ. Low-grade gliomas. Current Treatment Options in Oncology2009;10(August 3–4.

[6]. Fisher PG, Breiter SN, Carson BS, Wharam MD, Williams JA, Weingart JD, Foer DR, Goldthwaite PT, Tihan T, Burger PC.A Clinicopathologic Reappraisal of Brain Stem TumorClassificationIdentification of Pilocytic Astrocytoma and Fibrillary Astrocytoma as Distinct Entities.Cancer. 2000 Oct 1;89(7):1569-76.

[7]. Zu-Gui Li, MMa,,Hai-Yu Mu, MMb .Extracranial bone metastases from recurrentanaplastic astrocytoma on FDG PET/CTA case report a care-compliant article.Medicine (Baltimore). 2017 Jun; 96(23): e7123.

[8]. Christina Louise Pedersen, BertilRomner. Current treatment of low grade astrocytoma: A review. Clinical Neurology and Neurosurgery 115 (2013)

[9]. Duffau H, Taillandier L, Capelle L. Radical surgery after chemotherapy: a newtherapeutic strategy to envision in grade II glioma. Journal of Neuro-Oncology2006;80(November 2

[10]. Functional Outcome after Low-Grade AstrocytomaTreatment in Childhood. CANCER January 15, 2006 / Volume 106 / Number 2

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