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Metastasis to Cerebellopontine Angle: A Case Report

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Abstract: ***Introduction: Cerebellopontine angle tumours accounts for 5-10% of intracranial tumours. Most CPA tumours are benign, with 85% being vestibular schwanomma, meningiomas, epidermoid cyst.Primary malignancies or metastasis to CPA are rare accounting for less than 2% of neoplasm in CPA. Most common metastasis is from breast, lungs, nasopharynx, melanoma. Case report: A 35yr old female presented with headache for 1yr, diplopia,deviation of right angle of mouth. MRI finding was suggestive of tuberculoma. Patient took ATT for 1 month, but didn't show any improvement. Excision of tumour was done via right fronto temporal craniotomy. Operative D/D- trigeminal schwanomma, temporal glioma, meningioma was made. Tissue was sent for histopathology study. Histopathology findings → sheets of malignant epithelial cells with high N:C ratio, hyperchromasia, with prominent nucleoli, mitosis- 10/10hpf. Focal areas of glial tissue and necrosis seen. Provisional diagnosis of squamous cell carcinoma / GBM made. Immunohistochemistry (panCK, GFAP, Ki67, HMB-45) done. panCK diffusely positive in tumour cells, Ki67 index -40%, GFAP, HMB 45 negative in tumour cells. So final diagnosis of metastatic squamous cell carcinoma to CPangle made. Conclusion: Therefore it is highly advisable to do intraoperative squash cytology or frozen section biopsy for early detection and proper patient management.***

Keywords: CP angle tumour, squamous cell carcinoma, IHC study

1. Introduction

A cerebellopontine angle lesion should be suspected whenever there is rapidly progressive hearing loss with same side facial palsy is the presenting complaint. Cerebellopontine angle is located between the cerebellum & the pons. The cerebellopontine angle cistern is one of the subarachnoid cisterns that contains CSF, arachnoid tissue, cranial nerves & associated vessels. The Cerebellopontine angle is the site of a specific set of neurological disorders known as the Cerebellopontine angle syndrome, consists of a group of symptoms which arise due to presence of specific cranial nerves close to CPA, which includes unilateral hearing loss, speech impediments, disequilibrium, tremors or loss of motor control. CPA tumours are the most common tumours of posterior fossa accounting for 5-10% of all intracranial tumours, most of which are benign in nature[1,4]. Most common tumour at CPA is vestibular schwanomma[2,5] (arising from cranial nerve VIII)85%, meningioma(arising from meningioma or membranes covering the cranial nerve)10%, cerebellar astrocytoma, intracranial epidermoid cyst, lipoma, glomus jugulare. Malignant tumours of CPA may be primary or secondary accounting for < 2% of all tumours[1]. Most of the metastasis is from breast[3], lungs, nasopharynx, melanoma, thyroid, renal. Here is case of metastasis to CPA with an unknown primary.

2. Case Report

A 35yr old female presented to neurology OPD with complaints of right side headache for 1yr, decreased vision of right eye for 6months, decreased sensation rt side face-6months, deviation of right side angl of mouth for 4months, with vomiting 4 episodes. On examination she was conscious, oriented with rt eye proptosis. Neurological examination showed CN 2 defect i.e Rt eye Visual acuity showed PL/PR absent in Lt eye only PL. Fundoscopy was normal, B/L pupils were normall reacting to light. CN 3,4,6deficit showing Rt eye proptosis, Rt lateral rectus palsy but no nystagmus. CN 5 deficit, decreased sensation along the distribution of V1, V2, V3 of rt side. Corneal reflex was absent. Rt masseter tone was decreased with jaw was deviated to rt side. CN 8 deficit as there was decreased hearing in rt ear showing AC>BC in rinne, weber was lateralised to Lt. CN 9& 10 showed decreased gag reflex on left side. No meningeal or cerebellar signs. Spine was normal & rest sensory was also normal. MRI brain was done which showed an extra- axial predominantly cystic & solid lesion in Rt CPA & temporal region with perilesional edema & mass effect with erosion of right mastoid bone, skull base & widening of internal acoustic meatus - S/O – tuberculoma or Abscess . Patient was on ATT for 1 month but there was no improvement. Then she underwent excision of tumour via right fronto-temporal craniotomy. With an intraoperative findings of a grayish pink vascular solid cystic lesion-trigeminal schwannoma, temporal glioma, meningiona tissue was sent for histopathological study. Histopathology section showed sheets of malignant looking epithelial cells with high N:C ratio, hyperchromasia , with prominent nucleoli, mitosis- 10/10hpf. Focal areas of glial tissue and necrosis seen. Provisional diagnosis of Squamous cell carcinoma / Gliaoblastoma multiformis was made. Then for confirmation IHC study was conducted, which showed diffuse positivity for pan CK and negative for GFAP, HMB-45 and Ki-67index- 40%. So a final diagnosis of Metastatic Squamous Cell Carcinoma was made.

3. Discussion

Most of the CPA tumours are benign in nature and mostly are schwanomma[1,5]. Primary carcinoma or metastatic deposit are rare accounting for less than 2%. They should be identified and differentiated early because the management is entirely different. An intraoperative squash or frozen section should be conducted for early diagnosis. Primary squamous cell carcinoma usually arise from malignant conversion of epidermoid cyst into SCC, with a very poor prognosis with a median survival of 9months, but this is rare[1,2]. Mostly SCC in CPA is metastasis from nasopharynx[2]. The exact mechanism of spread is uncertain. Unfortunately we loss the patient and the primary was unknown.

References

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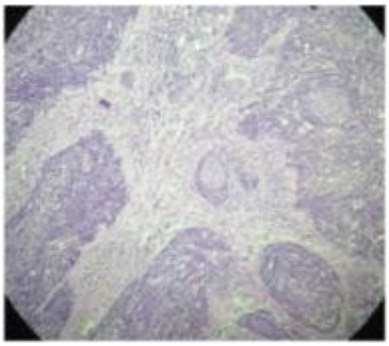

Figure 1: H& E: low power view (100X) showing tumour cells arranged in sheets.

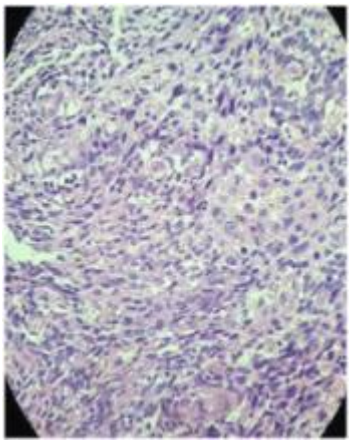

Figure 2: H&E: high power view (400X) showing individual tumour cells round to polygonal , high N:C ratio, hyperchromatic nuclei, prominent nucleoli

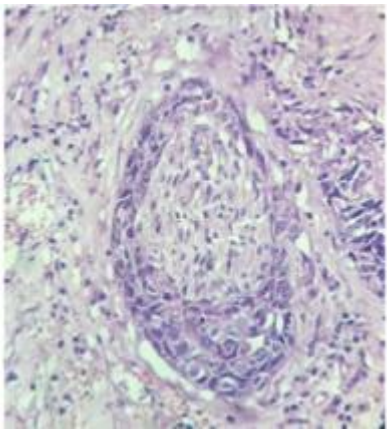

Figure 3: H&E low power view (100X) showing tumour cells arranged around the nerve, showing perineural arrangement

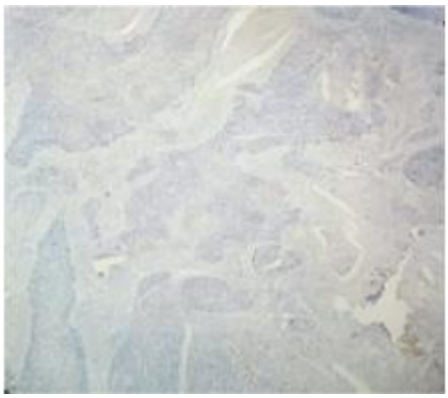

Figure 4: IHC for GFAP, negative in tumour tissue

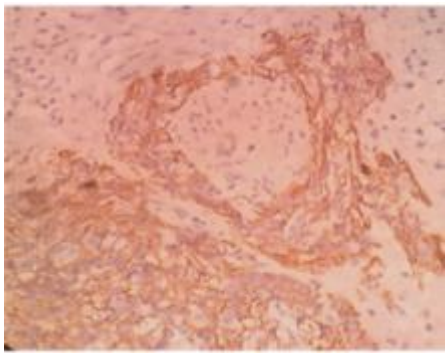

Figure 5: IHC for panCK positive in tumour tissue showing cytoplasmic positivity, perineural arrangement

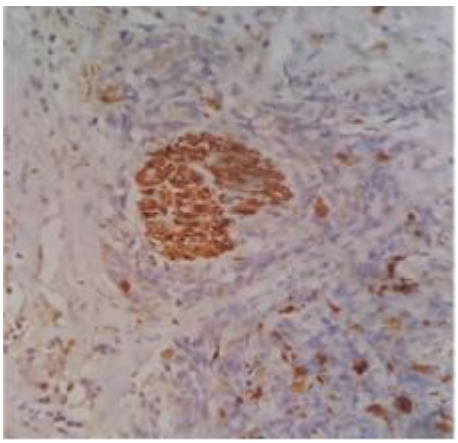

Figure 6: IHC for S- 100 showing nuclear positivity in neural tissue and negative in tumour tissue

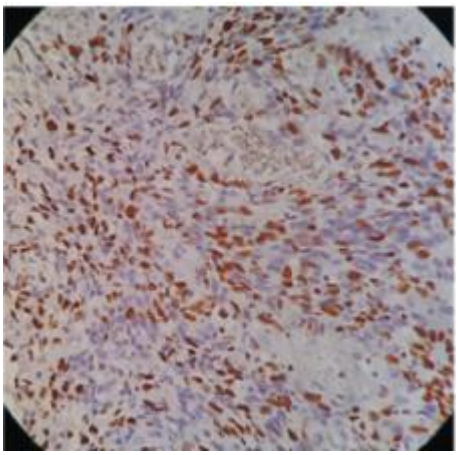

Figure 7: IHC for Ki- 67 showing nuclear positivity in 50 % of tumour cells representing high mitotic rate.