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Case Report

Synchronous Malignancy of Olfactory Neuroblastoma And Carcinoma Breast

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ABSTRACT:
Olfactory Neuroblastoma is a malignant neuroectodermal neoplasm arising from the olfactory membrane/olfactory placode of the sinonasal tract. It is an uncommon malignant neoplasm comprising 3% of all sinonasal tumours. Annual incidence of 4 cases/10 million population, occurs mostly between 5th to 6th decade of age. We report a case of 28 year old female patient presented with spontaneous episode of epistaxis. On histopathology showed uniform round cells with vesicular nuclei and indistinct borders surrounded by neurofibrillary material and few pseudorosettes. During the follow up period, patient was diagnosed with invasive breast carcinoma (within 3 months).

Keywords: olfactory neuroblastoma, olfactory placode, sinonasal tumours

INTRODUCTION:

Olfactory neuroblastoma (ONB), also named esthesioneuroblastoma is a rare sinonasal neoplasm of the olfactory neuroepithelium. Most common site of occurence is the upper nasal cavity. Since it arises from cribriform plate, tends to have intracranial extension. 20 – 25 % cases show distant metastasis during long term follow up. Hyams four-tiered staging system is a major prognosticator. Modified Kadish staging also aids for prognosis. Gene profiling studies of primary olfactory neuroblastoma have shown altered transcriptional pathways (TGF beta pathway, angiogenesis, EMT, IL6-JAK-STAT3).These patients have recurrence and shorter disease free survival. Molecular genetic studies of ONB gives information on 2q32-q37 deletions which is also very well described in Ca breast.

CASE PRESENTATION:

A 28 year old female patient presented to the casualty with complaints of spontaneous episode of epistaxis which did not subside on its own. Anterior nasal packing was done under aseptic precaution. There was no history of nasal obstruction, nasal discharge, pain, trauma and bleeding disorders.

Examination:

Patient was conscious and oriented. All the vitals were normal. There was no visible lesion seen in nose. Oral cavity found to be normal. Throat was clear. Bilaterally ears were normal.

Investigations:

Diagnostic nasal endoscopy of right nasal cavity shows a reddish polypoidal mass seen arising from upper part of the nasal cavity between the middle turbinate and septum. CECT PNS shows a small well defined hyper enhancing polypoidal mass in the right nasal cavity abutting nasal septum and right middle turbinate, measuring approximately 35 x 4 x24 mm.

Fig 1

Fig 2

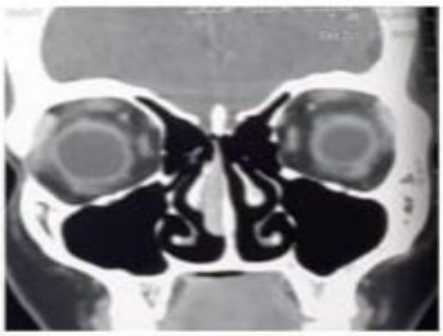


Fig 3

Biopsy:
The gross specimen received was 2 pale brown tissues larger m/g 2.5 x 1 x 0.3cm and smaller m/g 1.5 x 0.8 x 0.2 cm

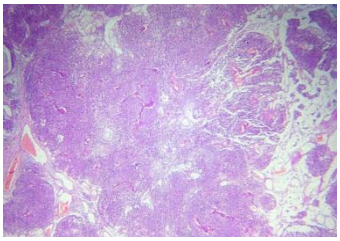


Fig 4

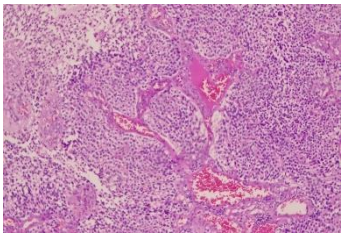


Fig 5

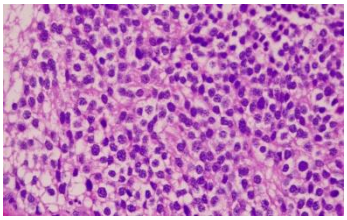


Fig 6

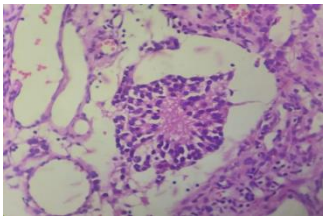


Fig 7

On microscopy section showed an infiltrating neoplasm (fig 4 & fig 5) composed of round cells arranged in lobules, neurofibrillary stroma is less prominent (fig6), few pseudorosettes seen (fig 7)

Immunohistochemistry:

Fig 8	Fig 9	Fig 10	Fig 11
Chromogranin +ve	S100 +ve	CD 20 -ve	CK -ve

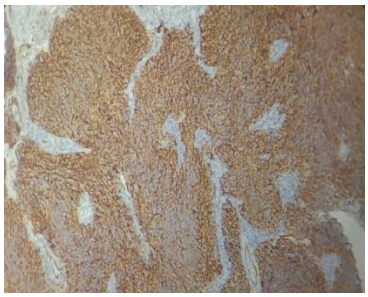


Fig 8

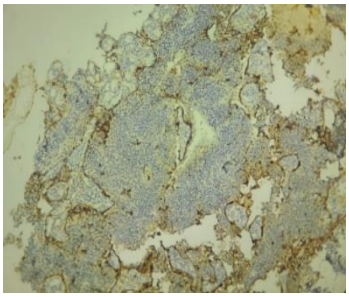


Fig 9

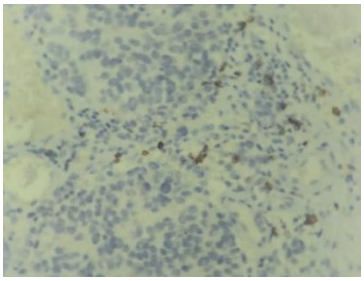


Fig 10

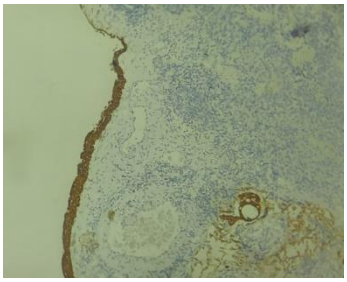
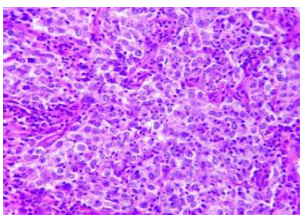
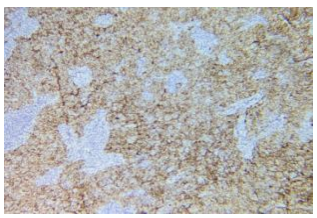


Fig 11

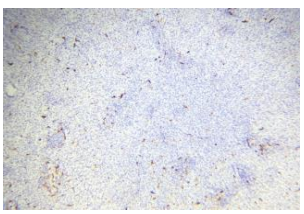
Treatment and Follow up:
The Whole body PET-CT was done in September 2022 and found a metabolically active focal lesion in the right breast. (with in 3 months duration) USG Guided core needle biopsy of right breast lesion followed by excision of the lump was done. Right breast lump was diagnosed as Invasive breast carcinoma. IHC for neuroendocrine markers was done and it came out negative. Hence ruled out metastasis.

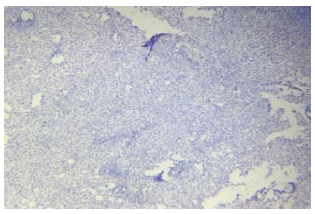


Microscopy

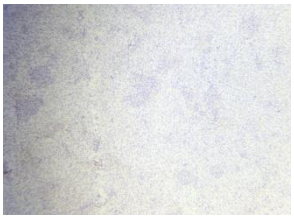


Pan CK +ve





S100 –ve **Chromogranin –ve**



Synaptophysin –ve

DISCUSSION:

Synchronous malignancy refers to two or more primary malignancies that are diagnosed within a 6-month period. Tumours are developed from two different sites in the body. Incidence is rare (2-3%). First described in 1879 by Bilroth. Synchronous malignancies are usually multifactorial ie genetic,common risk factors, environmental. In this case Tp53 mutation and 2q32-q37 deletions have been described in both Olfactory neuroblastoma and invasive breast carcinoma. However, metastasis to breast from Olfactory neuroblastoma have also been rarely reported.

CONCLUSION:

In our case, histopathology and IHC play an important role in arriving at final diagnosis. Prognosis varies depending on the stage of the carcinoma.

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