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RESEARCH ARTICLE

SCALP LESION PRESENTING AS METASTASIS OF UNKNOWN PRIMARY

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ABSTRACT

Scalp swellings are commonly seen in surgical practise. Hard swellings indicate bony origin with metastasis being more common than a primary bone pathology. Lung and breast cancer are the common primary malignancies in such cases. We review the literature on HCC as a source of skull metastasis and report a case of 45 year old man who presented with an isolated scalp swelling. CT scan showed a metastatic lesion in occipital region with osteolysis. Trucut biopsy was suggestive of adenocarcinoma but CT Chest, Abdomen and pelvis isolate the primary. Finally on PET CT, diagnosis of HCC was made and the patient who was being considered for definitive excision is now being given palliative chemotherapy.

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INTRODUCTION

Incidence of skull metastasis in HCC is rare but there is an interesting trend after 90's with increase in the reported cases. This might due to prolonged survival and improvement in treatment of HCC. By reporting this case we want to highlight that in high incidence regions like Asia and Africa, HCC should be closely followed for skull metastasis.

Case Presentation

A 45 year old non alcoholic male patient presented to our OPD with complaint of swelling in the head for 3 months. There was no history of trauma. On examination there was a 6 x 4 x 5 cm hard, smooth and fixed lump on his occiput (Figure 1). The lump was non tender and superficial temperature was not raised. Patient had no personal or family history of malignancy. Contrast CT head was suggestive of a extra calvarial soft tissue swelling of 3.5 x 4.5 cm in the occipital region involving the bony calvarium causing lytic destruction with extra calvarial extension, suggestive of metastatic foci (Figure 2). Fine needle aspiration cytology was done that was inconclusive.

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Core biopsy was suggestive of poorly differentiated adenocarcinoma with pseudo inclusions (Figure 3). His serum markers for Hepatitis were non reactive. Provisional diagnosis of carcinoma of unknown primary was made and CT chest, abdomen and pelvis were done that could not isolate the primary, therefore PET can was done that clinched the primary in form of Hepatocelullar carcinoma (Figure 4). Patient is now being treated with palliative systemic chemotherapy with Sorafinib. As the most common causes of metastatic foci to skull are lung and prostate cancer in males, basic investigations in form of x-ray chest and ultrasound abdomen were done that were not suggestive of these. Serum PSA was normal. As CT scan was not conclusive in locating the primary, we did a PET CT that showed features of HCC. Intent of treatment is palliative in stage 4 disease though patients with skull metastasis can be offered excision to prevent neurological complications like intracranial haemorrhage. (Stark, Andreas *et al*., 2010) As the patient was not a transplant candidate as per UNOS criteria (Mazzaferro *et al*., 1996), he is now being treated with Sorafenib therapy with a palliatve intent. (Anne Helene Køstner *et al*., 2013) Patient is being followed for the response to therapy.

DISCUSSION

Most common neoplasms in the skull are metastatic, of which breast and lung cancer are the most common primaries.

(Michael *et al*., 2001) Extrahepatic metastasis is rare in HCC as patients have a cirrhotic liver which is invaded and destroyed by the tumour, resulting in early death. Lung is the most common site of extrahepatic metastasis followed by bones.[5]The most common sites of osseous metastases from HCC in decreasing order are vertebrae, sternum, ribs and long bones. The incidence in the skull is extremely rare and is reported to be 0.5%–1.6%. (Hsieh *et al*., 2007; Chan *et al*., 2004; Murakami *et al*., 1995) According to the literature, the most common clinical presentation of a skull metastasis from HCC is a painful subcutaneous mass, followed by neurologic deficits (ie, facial palsy, deafness, and visual defect), headache, and less commonly, seizure.

Figure 1. Showing the clinical image of the occipital swelling

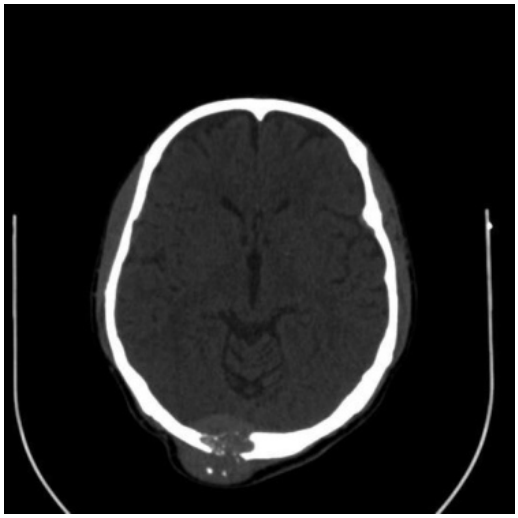

Figure 2. Ct scan of brain showing extra calvarial soft tissue swelling measuring 35 x 46 mm with a mean HU of 64 noted in the occipital region involving the bony calvarium causing lytic destruction with extra axial extension. Rest of the brain parenchyma normal

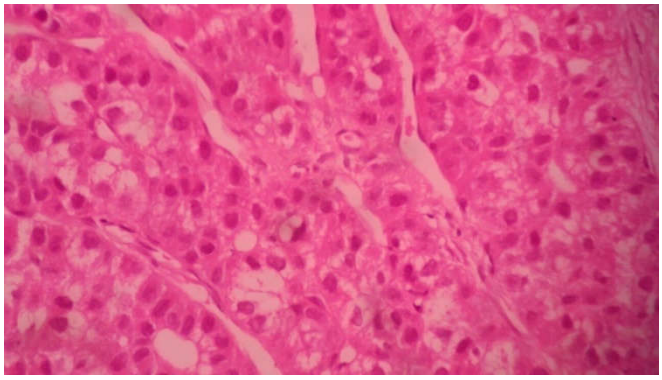

Figure 3. Histopthology showing multiple linear fragments displaying tumour cells arranged either trabecular , solid nests and glandular pattern. Individual cells haveabundant eosinophillic to vacuolated cytoplasm with pleoomorphic hyperchromatic nuclei. Some of them display intranuclear pseudo inclusions. PAS and Alcian blue staining was done that was negative. Features are suggestive of adenocarcinoma-moderately differentiated

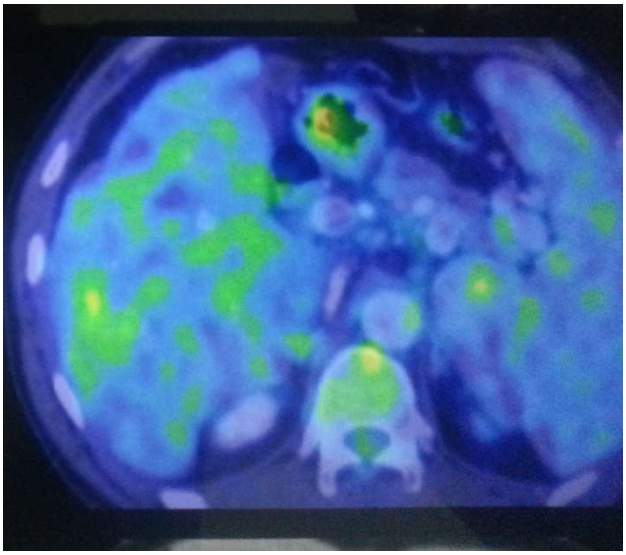

Figure 4. PET CT findings suggestive of cirrhotic liver with multifocal hepatocellular carcinoma with calvarial metastasis

(Murakami *et al*., 1995) Intracranial hemorrhage, epidural, or subdural hematomas are rare clinical presentations of skull metastasis. (Hsieh *et al*., 2009; Kanai *et al*., 2008) The most-common radiologic finding of a skull bone metastasis is the destructive or the osteolytic-type lesion, as was true with our patient. Metastases in the central nervous system from HCC generally occur through two different kinds of pathways in the advanced stage of HCC. (Chan *et al*., 2004; Yen *et al*., 1995) One of them is the hematogenous route via the lung to the brain parenchyma without skull involvement. In this group, the character of HCC is defined as a "neutrophilic" cancer, and the lung is the most common site of extracranial metastases. On the other hand, the second route is the osseous route via Batson's venous plexus to the skull. In this group, bone is the most common site of extracranial metastases, and HCC is characterized as an "osteophilic" cancer. Cancer cells might disseminate within the dipole via the diploic venous channels and expand through the inner and outer table of the skull. (Chan *et al*., 2004) Therefore, it is difficult to find the skull metastasis from HCC without the presence of other bone metastases. In spite of the low incidence of skull metastases,

there have been interesting trends in the reports about skull metastases from HCC. Moreover, in comparison with the incidence of skull metastases before the 1980's, the incidence after the 1990's has clearly increased because of a prolonged survival rate due to recent progress in the diagnosis and treatment of HCC. (Chan *et al*., 2004) Therefore, particularly in Asia, patients with HCC should be closely monitored for skull metastases.

Learning Points

- HCC is a common tumour in Asia and Africa due to prevalence of Hepatitis virus
- Skull metastasis is usually osteolytic, with lung, prostate and breast cancer as the most frequent primaries.
- In HCC incidence of skull metastasis is 0.5 to 1.6 %.
- PET CT is superior to CT alone in detecting unknown primary.
- Metastasis in HCC is amenable with surgery including the primary. The treatment option depends on Child's Pugh score, performance status and UNOS criteria for transplant.

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