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Skull metastasis of hepatocellular carcinoma in normal liver. Case report

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Abstract

Background: So far hepatocellular carcinoma (HCC) is the most common liver malignant tumour; it is rarely encountered on a healthy liver (9). The metastasis from HCC cancer are seen in lymph nodes (16%–40%) and lungs (34%–70%), (1,3,4,5,7,8), bone metastasis is unusual and some locations stay rare among them the skull (2,4,5). We report here a case of a patient operated in our department for skull metastasis. That patient was followed for hepatocellular carcinoma in digestive surgery department.

Case presentation: The patient is a 57 years old male presenting HCC on healthy liver, the patient was referred to our department by digestive surgery colleagues to manage a parietal subcutaneous mass; brain CT scans were performed objectified a calvarial osteolytic process. We remove the tumour and we put a cranioplasty using surgical cement, later the histological studies were in favour of secondary location of hepatocellular carcinoma.

Conclusion: Skull metastasis from hepatocellular carcinoma is rare, reporting such cases strengthen the idea of evoking HCC metastasis in the differential diagnosis of cranial subcutaneous mass.

Keywords
hepatocellular carcinoma, metastasis, skull tumour

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Introduction

The development of hepatocellular carcinoma on a healthy liver is unusual and skull metastasis from this type of cancer is rare; this make evoking the diagnostic of a metastatic hepatocellular carcinoma for a skull lesion difficult, we report a case of skull metastatic lesion from a hepatocellular carcinoma on patient with a healthy liver.

Case presentation

The patient is a male of 57 years old who presented weeks before he consulted an epigastric pain, then one month later a cranial left parietal subcutaneous mass. First an abdominal CT was performed objectified a tissue mass of 57 mm on the segment II of the liver extended to the gastro-hepatic omentum reaching the lesser curvature of the stomach,

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the surrounding hepatic tissue appeared to be normal; and all laboratory tests was initially normal. The patient was scheduled to a surgical resection meanwhile he was referred to our department to manage the cranial mass. The clinical exam at the admission found a conscious patient without neurological deficit presenting a left parietal mass with a diameter of 5 cm, soft, painless, fixed, pulsing, and without cutaneous defect. The brain CT objectified a tumor interesting the left parietal bone without cerebral invasion intensely enhanced after injection of the contrast product, on bony window the lesion is an irregular erosion measuring 48 x 53 mm, (Figure 1). On the brain MRI the tumor was hypointense on T1 weighted images intensely enhanced by Gadolinium, the T2 weighted images have a heterogeneous signal, the angio-MRI images objectify a multiple thin vessels inside the tumor, there was a shift effect on the dura but there was no invasion to either dura or cutaneous tissues (Figure 2). Bone scan with TC99m objectified a calvarial left parietal lake of fixation without any other skeleton locations. We operated the patient and we remove the lesion with the surrounding normal bone, it was a soft brown cauliflower-like mass highly vascularized, easily dissected from the cutaneous tissue pushing the dura witch was eroded at some spots, so we performed a dura plasty using a galea and a bone plasty using surgical cement to repair the bone defect. The histological study of the specimen found a predominance of pseudo glandular trabecular tissue and in the immunohistochemical examination there was a high expression of the hepatocyte antigen, so the diagnosis was in fact a secondary location of a fibro lamellar HCC. There was a full postoperative recovery. The patient was discharged from our department 7 days after the operation without any neurological deficits. We referred him back to general surgery where the liver tumor was resected with 2 cm of security marge and a portion of the stomach lesser curvature; the postoperative recovery was optimal. The patient is still followed in our external consultation since 24 months and there is no tumor recurrence on brain CT scans.

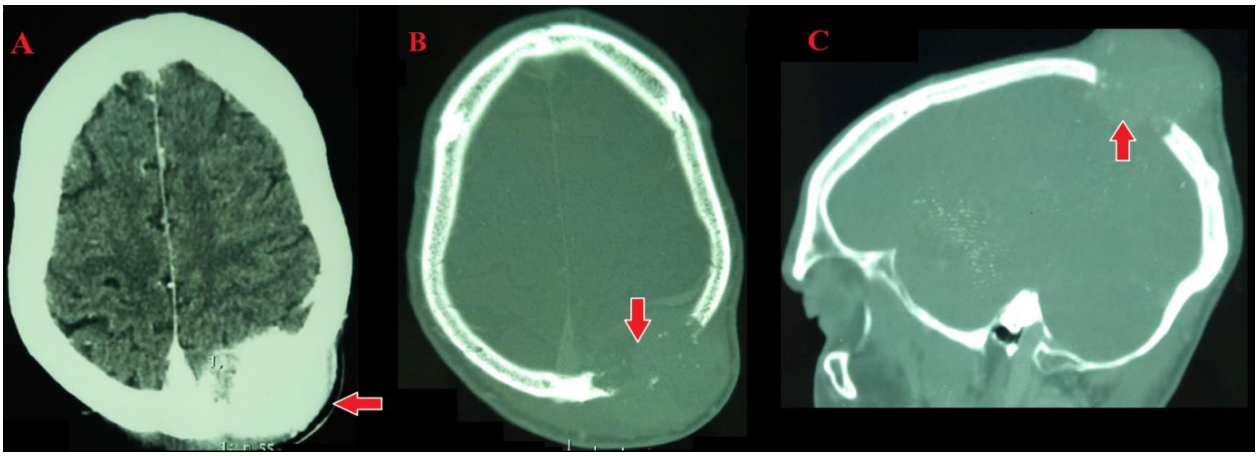

Figure 1: Preoperative brain CT scan. A: injected axial slide; B: bony window axial slide; C: sagittal bony window, showing an osteolytic left parietal lesion intensely enhanced after injection of the contrast product (red arrow).

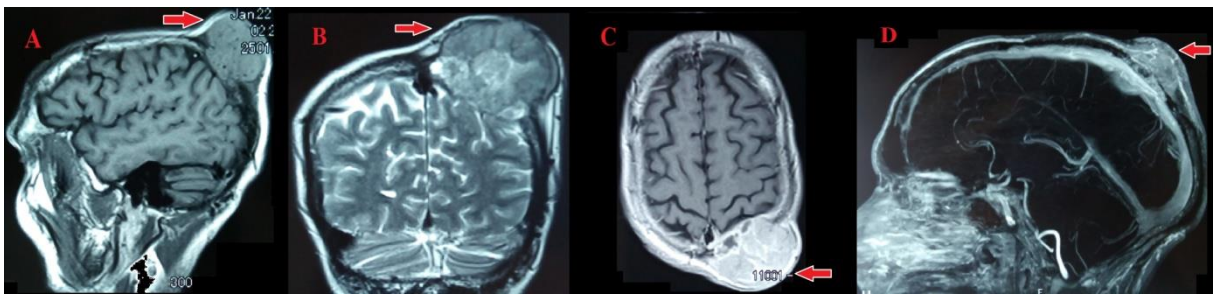

Figure 2: Preoperative brain MRI. A: T1 weighted imaging sagittal; B: T2 weighted imaging coronal; C: T1 enhanced; D: Angio MR, showing that the tumor is limited at skull plan without brain invasion and its hyper vasculazation nature

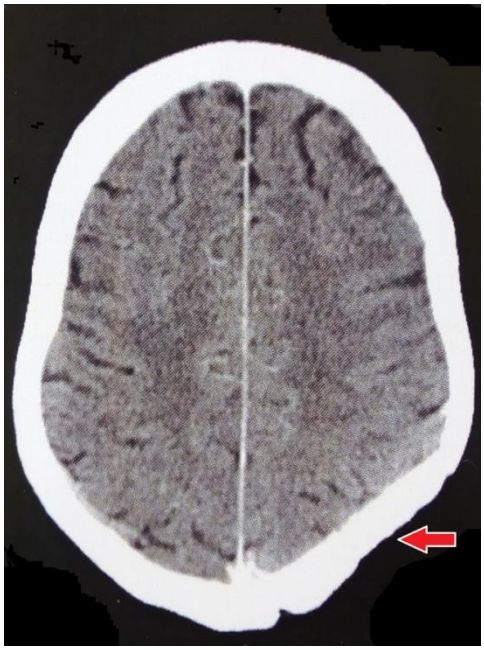

Figure 3: Preoperative brain CT. Bone plasty (red arrow), there is no tumor recurrence

Discussion

So far hepatocellular carcinoma is the most frequent malignant liver tumor; the incidence in a healthy non cirrhotic liver is rare, according to different series it is between 1.7% and 14% (9). Skull metastasis are most commonly seen from breast, lung, prostate, and thyroid cancers (2, 4), metastasis from hepatic cancer is rare (5,2,4) it was reported in 0.5 to 1.6% of patients with HCC in most studies (3,4,1), in a review performed in 2014, a total of 59 patients with solitary skull metastasis from HCC were published (1).Males are largely more exposed to this affection than females (1,4).Metastases occurring in the calvarial site were more frequent than those occurring in the skull base and facial skeleton (1).The most common clinical presentation is a subcutaneous mass with occasional painful sensation (57%), followed by neurological deficits(51%), headache (15%) and seizure (3%) (1). The subcutaneous mass is usually firm solitary painless or occasionally painful rapidly evolving neglected by the patient (1,6,4,3). The tumor size and location are related to the neurologic deficit which is rather present in the skull base tumors (visual disturbance, dysphagia, deafness and facial numbness), than in the volt tumors where the weakness of the limbs is more frequent (4,5,7). Although rare cases of tumor bleeding were reported, the per operative hemorrhage risk should be kept in mind and preventive measures should not be neglect (2,3,4,6). In plane X rays the lesion appears to be osteolytic in all reported patients (1,2,3,4,5,6,7,8). The brain CT shows the bone defect, and a significant homogenous enhancement in all cases (1,4,5). In MRI the lesion appears as iso or hypo intense in T1 and T2 weighted images. The treatment for skull metastasis, includes radiotherapy, chemotherapy, surgery and palliative care. A single calvarial metastasis can be treated surgically (4)**.** Although many reports suggest that the life expectancy is related to the liver failure and the presence of HCC skull metastasis don't change it significantly (7); all studies suggest that the surgical treatment for HCC metastasis may relief the patient, esthetic, reduce the risks of neurological sequelae, and thus improve the quality of life (1,2,3,4,5). Pre-operative embolisation is preferred (4).

Conclusion

Hepatocellular carcinoma (HCC) is responsible in rare reported cases of cranial metastasis, which clinical presentation is a subcutaneous mass and appears as an osteolytic lesion on radiological investigations. Although the vital prognostic is depending on the initial lesion, early diagnostic and surgical removal of the metastasis may improve the life quality.

Declarations of interest

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