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Spontaneous Epidural Hematoma From Skull and Dural Metastases of Hepatocellular Carcinoma : Case Report and Literature Review**Jeng-Hung Guo¹ , Der-Yang Cho¹, Yu-Kai Cheng¹****¹Department of Neurosurgery, China Medical University Hospital, Taichung, Taiwan, R.O.C.****Introduction :**

Spontaneous epidural hematoma can occur in patients with paracranial infection, bleeding or coagulation disorder, vascular malformation and neoplasm. Skull, dural and intracranial metastases from hepatocellular carcinoma(HCC) have been rarely reported. Epidural hematoma from skull and dural metastases of HCC are also extremely rare. We report a case of an acute spontaneous epidural hematoma from skull and dural metastases of HCC.

History and Clinical course :

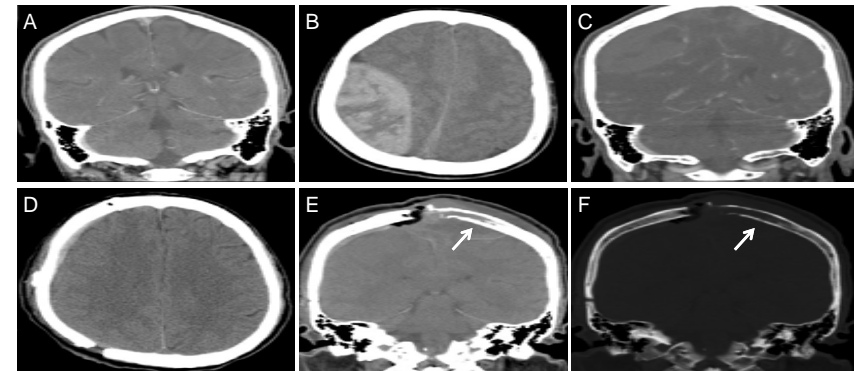
This 53-year-old male with hepatocellular carcinoma history and living donor liver transplantation just one year ago had sudden onset of mental deterioration to semicomatose. He also had intermittent headache and had no trauma history recently. Physical examination found left side limbs weakness. Brain computed tomography (CT) revealed large amount of acute epidural hematoma(EDH) in right high parietal-occipital area involving superior sagittal sinus with severe midline shifting. An emergent craniotomy and evacuation of EDH was performed. During operation, no scalp mass or trauma to scalp bone was found. Right frontotemporoparietal craniotomy demonstrated that the inner table and diploic space of the parietal bone were destroyed. Active bleeding from osteolytic scalp bone with mass-like lesion spreading on the overlying dura suggesting metastasis. Some soft, yellow-brown tissue were found in the right high parietal area which extended to near the superior sagittal sinus. The pathological examination reported skull and dural metastases of HCC which probably led to spontaneous EDH. He returned consciousness one day after operation. But unfortunately he died of sepsis one month later.

Discussion :

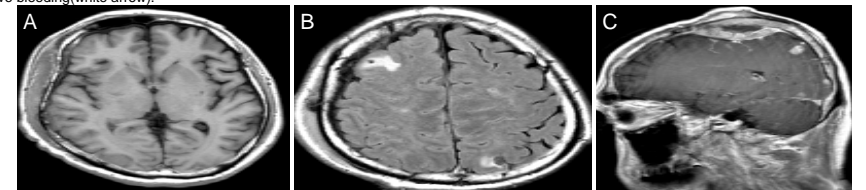
HCC has a characteristic of high risk of bleeding tendency due to hepatic failure and formation of neoangiogenesis. HCC commonly metastasizes to regional lymph nodes(16-40%) and the lungs(34-70%), but rarely to the skeletal system(1.6%-16%). The most common osseous metastatic sites are the vertebrae, pelvis and ribs. The incidence of skull metastasis of HCC has been reported to be 0.4-1.6%.

The most common clinical presentation was a scalp mass (63%), followed by neurological deficits (44%), headache (11%) and seizures (11%). The neurological deficits, which contained visual disturbance, dysphagia, deafness, facial numbness, and weakness of limbs, were associated with the cranial sites the tumor involved. In most cases of spontaneous EDH from HCC, bleeding arise from middle meningeal artery, emissary vein, and venous sinus with regional bone invasion. Histological feature shows many sinusoid-like blood vessels. In our case, the bleeding had arisen from the osteolytic bone with bleeder near the superior sagittal sinus.

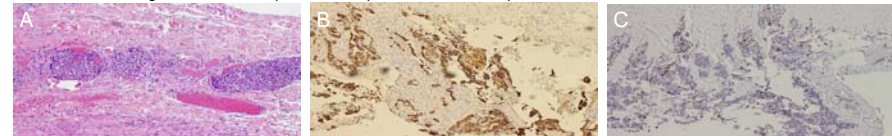
Two metastatic pathways were hypothesized as (1) the hematogenous route via the lungs to the brain parenchyma and (2) the osseous route via Batson's venous plexus to the skull. Unfortunately the patient had simultaneously skull/dural metastases and intracranial multiple brain metastases. The poor outcomes might be caused by its own poor prognosis of terminal stage of HCC, combined coagulopathy and liver failure, and high mortality rate of EDH. In patients with spontaneous EDH, metastatic HCC should be included in the differential diagnosis.



(A) Brain CT(one year ago) showed no intracranial hemorrhage nor metastasis. (B,C) Large EDH in right high parietal-occipital area and cross midline to the left high parietal area. (D,E,F) Brain CT(one day after operation) showed that most EDH was evacuated. Osteolytic scalp bone with active bleeding(white arrow).



(A) Axial T1-weighted MR image. (B) Axial T2-weighted MR image. (C) Sagittal T1-weighted MR image with Gd-DTPA. Multifocal hemorrhagic metastatic tumors in the right cerebellar hemisphere, left occipital lobe and bilateral parietal lobes.



(A) H&E stain showed metastatic grade 3-4/4 hepatocellular carcinoma composed of polygonal tumor cells with pleomorphic and hyperchromatic nuclei arranged in broad trabecular pattern or nests. (B) CK8(+) and (C) Hep-par1(+) consistent with metastatic hepatocellular carcinoma.

Reference :

1. Byoung-Gu Kim, Seok-Mann Yoon, Hack-Gun Bae, Il-Gyu Yun. Spontaneous Intracranial Epidural Hematoma Originating from Dural Metastasis of Hepatocellular Carcinoma. J Korean Neurosurg Soc 48 : 166-169, 2010
2. Kwang Moo Woo, Byong-Cheol Kim, Keun-Tae Cho, Eo-Jin Kim. Spontaneous Epidural Hematoma from Skull Base Metastasis of Hepatocellular Carcinoma. J Korean Neurosurg Soc 47 : 461-463, 2010
3. Takashi Goto, Takahiro Dohmen, Kouichi Miura, Shigetoshi Ohshima, Kazuo Yoneyama, Skull metastasis from hepatocellular carcinoma with chronic hepatitis B. World J Gastrointest Oncol 2010 March 15; 2(3): 165-168
4. Ryuichi Kanai, Hiroyuki Kubota, Tadashi Terada, Takashi Hata, Eisuke Tawaraya, Koji Fujii. Spontaneous epidural hematoma due to skull metastasis of hepatocellular carcinoma. Journal of Clinical Neuroscience 16 (2009) 137-140
5. C.-T. Hsieh, J.-M. Sun, W.-C. Tsai, T.-H. Tsai, Y.-H. Chiang, M.-Y. Liu. Skull metastasis from hepatocellular carcinoma. Acta Neurochir (Wien) (2007) 149: 185-190