

# Skull metastases

Skull [metastases](#) are [bone metastases](#) which are increasing in incidence.

Skull metastases are rare and present late in the course of the disease. It is unusual for metastatic lesion to be the primary presentation in a clinically silent [renal cell carcinoma](#) <sup>1)</sup>.

[Skull metastases](#) of extracranial origin is rare. The most common malignancies which metastasize to the skull are lung, breast, and prostate carcinomas <sup>2)</sup>

## MRI

Contrast-enhanced study with fat suppression was used in some cases when required. Classification of metastases was simplified to three yes/no questions: first, with regard to location (either in the calvarium or in the cranial base); second, with regard to distribution within the plane of the cranial bone (either “circumscribed” meaning clearly demarcated and confined to one bone, or “diffuse” and likely to spread across a suture to another bone); and third, with regard to invasion (“intraosseous” in cranial bones only, or “invasive” spreading from the skull, either out into the scalp or inward to the dura and perhaps further in). Primary sites were breast cancer (55%), lung cancer (14%), prostate cancer (6%), malignant lymphoma (5%), and others (20%). The mean time from primary diagnosis to skull metastases diagnosis was 71 months for cases of breast cancer, 26 months for prostate cancer, 9 months for lung cancer, and 4 months for malignant lymphoma. Calvarial circumscribed intraosseous metastases were found most frequently (27%). The patients were mainly asymptomatic. However, some patients suffered from local pain or cranial nerve palsies that harmed their quality of life. Treatment, mainly for symptomatic cases, was by local or whole-skull irradiation. Metastatic skull tumors are not rare, and most are calvarial circumscribed intraosseous tumors. MR images contribute to understanding their type, location, and multiplicity, and their relationship to the brain, cranial nerves, and dural sinuses. Radiation therapy improved the QOL of patients with neurological symptoms <sup>3)</sup>.

## Case series

3 patients with skull metastases from intrahepatic cholangiocarcinoma (ICC). A combination of computed tomography (CT), contrast-enhanced magnetic resonance imaging (MRI), 18F-fluorodeoxyglucose positron emission tomography (FDG-PET), and methionine-PET were used for imaging. Sites of tumors were the lateral left orbit and right parietal bone in case 1, the left parietal bone, left temporal bone, and lateral left orbit in case 2, the right petrous bone, right occipital bone, and upper cervical vertebra in case 3. The metastases were confirmed to have originated from ICC by biopsy in two of the cases and diagnosed by MRI and FDG-PET in case 2. Radiosurgery and radiotherapy had positive effects on symptom improvement and cosmetic problems <sup>4)</sup>.

<sup>1)</sup>  
Pang C, Loo YL, Corns R, Mohammed R. Solitary calvarial haemangioma presenting as metastatic renal cell carcinoma. BMJ Case Rep. 2018 May 12;2018. pii: bcr-2017-223334. doi: 10.1136/bcr-2017-223334. PubMed PMID: 29754133.

<sup>2)</sup>  
McCormack KR. Bone metastases from thyroid carcinoma. Cancer 1966;19:181-4.

<sup>3)</sup>

Mitsuya K, Nakasu Y, Horiguchi S, Harada H, Nishimura T, Yuen S, Asakura K, Endo M. Metastatic skull tumors: MRI features and a new conventional classification. J Neurooncol. 2011 Aug;104(1):239-45. doi: 10.1007/s11060-010-0465-5. Epub 2010 Nov 26. PubMed PMID: 21110218; PubMed Central PMCID: PMC3151370.

4)

Fujimoto K, Kuroda J, Makino K, Hasegawa Y, Kuratsu J. Skull metastases from intrahepatic cholangiocarcinoma: report of 3 cases and review of the literature. Neurol Med Chir (Tokyo). 2013;53(10):717-21. Epub 2013 Sep 27. Review. PubMed PMID: 24077267.

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