Clinical Reports

Hepatic metastasis from intracranial meningioma

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Summary: A 38 year old man presented with a hepatic mass which biopsy showed to be a metastasis from an intracranial meningioma. The meningioma originally followed cranial radiotherapy. Previous reports of extracranial metastases are reviewed.

Introduction

Intracranial meningioma is usually a benign tumour. While local recurrence and direct local spread are well recognized, distant extracranial metastases are rare.¹ We report a case of massive hepatomegaly which was due to a metastasis from an intracranial angioblastic meningioma.

Case report

Our patient had an eosinophilic granuloma partially excised from the left frontal bone of the skull, followed by local radiotherapy (240 Gy) when aged 12. After 21 years of good health he presented aged 33 with a right-sided parieto-occipital meningioma, which was excised in a two stage procedure. Microscopy showed (Figure 1a) a highly cellular mitotically-active tumour composed of cells with oval nuclei and scanty cytoplasm. Numerous sinusoidal vascular spaces were present. The diagnosis of angioblastic meningioma was made. A postoperative course of ⁶⁰Co irradiation (50 Gy) was given to his right parietal region. He remained well for the following 5 years.

He then presented with a 6 month history of progressive abdominal swelling and mild upper abdominal discomfort. Physical examination revealed massive hepatomegaly. Full blood count, erythrocyte sedimentation rate and liver function tests were normal. A computed tomographic (CT) scan of the liver followed by hepatic angiography showed a massive vascular tumour 28 × 18 cm replacing the right lobe of the liver, with further small deposits in the left lobe. The portal vein was blocked at the confluence with the splenic vein. Liver biopsy (Figure 1b) demonstrated a vascular connective tissue tumour with a moderate

degree of mitotic activity and morphologically identical to the meningioma excised 5 years previously. CT scan of the chest showed small subpleural deposits while there was no evidence of local recurrence on CT scan of the head.

Discussion

It is extremely rare for massive hepatomegaly to be due to a meningioma metastasis. It is recognized that meningiomas may metastasize outside the central nervous system, typically to the lung, liver, lymph nodes and bone, in less than 1% of cases.¹ There are no cases reported where massive hepatomegaly has been the dominant clinical problem.² Histology showed that this hepatic tumour was a metastatic angioblastic meningioma. The angioblastic subtype of meningioma contributes to only 6% of all meningiomas³ but 15% of metastasizing meningiomas.² Dissemination of tumour cells is thought to occur following invasion of the dural sinuses by tumour cells either at the time of craniotomy or due to invasion of the dura by tumour.

The angioblastic meningioma has been the centre of much controversy. Some class it as a haemangiopericytoma indistinguishable from haemangiopericytomas at other sites.⁴ Others believe that the concept of angioblastic meningioma should be retained to include craniospinal haemangiopericytomas and the transitional forms bridging the haemangiopericytoma, haemangioblastoma and the classic meningioma.⁵ They postulate a common origin from mesenchymal cells in or derived from the meninges. We favour this latter view and designate our tumour an angioblastic meningioma. The association between irradiation and meningioma is now well documented, indeed some authors argue that the relationship is causal.⁶

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Figure 1 (a) Parietal meningioma. The tumour is highly cellular and composed of small cells with intervening sinusoidal vascular channels. Haematoxylin and eosin $\times 150$. (b) Liver biopsy showing metastatic tumour tissue with similar appearances as the primary meningioma. Haematoxylin and eosin $\times 150$.

It is difficult to be certain whether the previous irradiation played a role in the induction of this meningioma. The necessary criteria for irradiation meningioma are: location within the field of irradiation, features suggesting rapid growth and aggressive biological behaviour.³ This tumour fulfils these criteria by reason of its position, high mitotic activity and metastatic behaviour. However, its parasagittal position is the commonest for primary meningiomas in general, while rapid growth and aggressive behaviour are characteristic of angioblastic menin-

giomas compared with the other types of meningioma.

This case illustrates that metastatic meningioma should be included in the differential diagnosis of hepatomegaly in patients with a past history of meningioma.

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