INTRODUCTION

Meningioma is a neoplastic growth originating from arachnoidal cells in the meninges. It constitutes 27% of primary CNS tumours. In 2000, WHO categorized the meningioma into three categories i.e. grade-I (benign), grade-II (atypical) and grade-III (malignant). Although meningiomas are usually benign, malignant meningiomas with distant metastases occur infrequently. There is little information available in literature regarding the frequency of metastases in meningiomas; their incidence has been vaguely reported to be less than one per 1,000.1 These are most often found in the lung parenchyma, liver or lymph nodes.2 Hypoglycemia secondary to primary hepatoma or islet-cell cancer has been frequently described, but a complication of metastatic meningioma is an exceedingly rare event. Elevated glucose consumption within the tumour might be addressed as one of the reasons for hypoglycemia but not due to the elevated serum levels of insulin or insulin-like growth factors (IGF).3

Here, we present a case report of primary atypical intracranial meningioma metastasizing to liver and bone, after 4 years of surgery and postoperative radiotherapy, presenting with multiple episodes of hypoglycemia.

CASE REPORT

A 55-year-old male patient, who was not known to be diabetic or hypertensive, presented with an intracranial mass in 2003. This mass was arising from left parieto-occipital region of brain. Radiological findings were in favour of meningioma. Tumour was excised and histopathology report was of atypical meningioma (Figure 1). He was given radiotherapy up to 60 Gy after 3 weeks of surgery. Patient remained well till 2007 when he developed multiple Space Occupying Lesions (SOL) in the liver and presented with right hypochondrial pain, weight loss, anorexia and frequent episodes of hypoglycemia. Core biopsy of the SOLs revealed metastatic meningioma (Figure 2). Immunohistochemistry (IHC) was also in favour of meningioma. Further workup revealed extensive skeletal metastases on radionuclide bone scan. However, blood picture, renal function tests; serum bilirubin, hepatic enzymes, Prostate Specific Antigen (PSA) and alpha fetoprotein levels were within normal limits. Serum alkaline phosphatase was markedly raised (800 U/L). Hepatitis B and C profile were normal. Serum LDH was raised and coagulation profile were also deranged. Random blood glucose was 80 mg/dL, which later on reduced to 20 mg/dl. Chest X-ray was normal. Fresh MRI of brain revealed no residual disease.

On the basis of this clinical scenario, he was started Ifosfamide-based Chemotherapy (ICE) of which he received 4 cycles with significant subjective response but the liver SOLs remained the same in size. Patient started to have frequent hypoglycemic attacks, which were managed with oral and intravenous glucose supplements. When he came for the 5th cycle of chemotherapy, his general condition had markedly deteriorated (ECOG-III). Oral intake was reduced. He
was having nausea, vomiting and high-grade fever. Haemoglobin was 7.1 g/dl, TLC was 800/µL and platelets were 12000/µL. Alkaline phosphatase had increased to 2900 U/L. Further chemotherapy was postponed. He was given bisphosphonate and palliative radiotherapy to the most painful bony metastases. In spite of the best supportive care, he expired in August, 2008, one year after the diagnosis of liver and bone metastases.

**DISCUSSION**

Meningioma is a primary intracranial tumour and its metastases have been reported, usually in the grade-III type. This was a rare case of atypical (grade-II) meningioma that metastasized to liver and bones. This patient was successfully managed initially in 2003 with surgery and radiotherapy and he presented in 2007 with disseminated metastases. He was thoroughly examined for some other primary neoplasm especially of prostate but the workup was negative. Finally, liver biopsy solved this issue and it turned out to be a metastatic meningioma. Extensive literature search has revealed no definite treatment for metastatic meningioma. Some worker treated it with chemoembolization while others with radiotherapy but the survival was not more than 6 months in either group. Uptill now, very few cases of metastatic meningioma have been reported and usually metastatic sites were pleura, skin, brain, lung, bone or liver. Literature search has not revealed any case of metastatic meningioma ever reported in Pakistan. A case of anaplastic meningioma has been reported from Pakistan but without metastasis.

This case report has, therefore, added to the possibility of metastatic spread of meningioma of comparatively lower grade.

**REFERENCES**


