A Rare Case of Nasopharyngeal Carcinoma with Widespread CNS Metastases

Abstract

S Rafae, YY Elamin, K Cronin, S Brennan, N Osman
Hope Directorate, St James’s Hospital, James St, Dublin 8

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Nasopharyngeal carcinoma is unique among head and neck cancers. Despite definitive treatment, there is a high rate of recurrence. Central nervous system (CNS) metastases are rare. Brain metastases and multiple brain metastases are particularly, leptomeningeal carcinomatosis are extremely rare. We present a case of recurrent nasopharyngeal carcinoma with brain metastases and leptomeningeal carcinomatosis in the absence of local recurrence and systemic metastases.

Introduction

Nasopharyngeal carcinoma is unique among head and neck cancers. Despite definitive treatment, there is a high rate of recurrence. Central nervous system (CNS) metastases are rare. Brain metastases and multiple brain metastases are particularly, leptomeningeal carcinomatosis are extremely rare. We present a case of recurrent nasopharyngeal carcinoma with brain metastases and leptomeningeal carcinomatosis in the absence of local recurrence and systemic metastases.

Case Report

A 36 year old ex-smoker presented with a twelve month history of right facial discomfort and numbness. PET showed a 4.5 cm soft tissue mass in the nasopharyngeal mucosa, extending into the parapharyngeal space and a 0.8 cm FDG avid right level 2 lymph node, with no evidence of distant metastasis. Lymph node biopsy was consistent with NPC, cT3N1M0. Radical chemoradiotherapy was commenced - 70/35 fractions intensity modulated radiation therapy, with concomitant Cisplatin, in accordance with the Intergroup 0099 trial in NPC. Adjuvant treatment involved Cisplatin and 5-Fluorouracil. PET post completion of treatment showed disease resolution. MRI seven months later revealed multiple ring enhancing lesions throughout both cerebral hemispheres, and multiple areas of leptomeningeal enhancement involving the thoracic and lumbar cord. Additionally there was mild focal FDG uptake on PET within the spinal canal at T7 (Figure 1). There was no evidence of disease outside the CNS. Palliative radiotherapy was administered to the spine and brain, for back pain and lower limb weakness, and palliative chemotherapy was commenced on a three weekly basis, with Cisplatin and weekly intrathecal Cytarabine. MRI post six cycles of treatment showed a significant improvement with near resolution of intracranial metastases (Figure 2), however, there was still some persistent leptomeningeal deposit in the lumbar spine, with adjacent leptomeningeal enhancement.

Discussion

Recurrence is one of the most common failures in nasopharyngeal cancer. The majority of all recurrences develop within three years of the completion of radiation therapy. Isolate local relapse is commonly seen. Kwong et al showed that patients with loco-regional relapse had significantly higher rates of distant metastases than patients with loco-regional control, with a four year free of distant metastases of 40.7% vs 29.4%. Patients with nasopharyngeal cancer in the literature had had pulmonary and liver metastases prior to developing CNS metastases. Brain metastases in nasopharyngeal carcinoma are uncommon. And specifically, carcinomatous meningitis is an extremely rare phenomenon. Leptomeningeal carcinomatosis is broadly defined as the dissemination of tumour cells with invasion of the meninges. The most common solid tumours known to cause this are breast cancer (12-35%), lung cancer (10-26%) and melanomas (5-25%). Standard treatment of leptomeningeal disease includes radiation and intrathecal chemotherapy, and treatment of the systemic cancer if possible.

Orit Kaidar-Person et al summarized reports of brain metastases from nasopharyngeal carcinoma. Of the six papers reviewed, five reported parenchymal brain metastases. And among these, three had evidence of systemic metastases at the time of, or prior to the diagnosis of brain involvement. Khor et al reported a case of nasopharyngeal carcinoma with an isolated temporal lob metastasis that appeared forty five months post completion of initial treatment.

Correspondence: S Rafae
Hope Directorate, St James’s Hospital, James St, Dublin 8

References

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