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## Intraventricular metastatic ball from a lung primary- resembling meningioma

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### Abstract

Solitary Intraventricular metastasis is rare and carries a poor prognosis. Here is a case of 55 year old farmer presented to us with headache, vomiting and gradual deterioration in vision. Imaging studies revealed a heterogeneously enhancing lesion in the right ventricle. Intraoperatively highly vascular Intraventricular lesion arising from choroid plexus was found. Histopathology revealed metastatic lesion from epithelial metastasis. HRCT of the lung revealed a small lesion in the left apex of the lung. The patient recovered well and was referred for radiotherapy.

**Keywords:** Intraventricular, Metastasis, Lung primary, solitary

### Introduction

Brain metastases represent a significant source of morbidity and mortality in patients with systemic cancer. They are neoplasms that originate in tissues outside the central nervous system (CNS) and spread secondarily to the brain. In adults, cerebral metastases are by far the most common intracranial tumors, and their incidence seems to be rising as systemic cancer therapies have improved, thereby extending patients' lives. The common intraventricular lesions in adult are colloid cyst, choroid plexus papilloma, Intraventricular gliomas (septal) and subependymal giant cell astrocytomas. Solitary intraventricular metastasis is a rare entity with the commonest primary site being Lung carcinoma. Surgical resection is the main modality of treatment. Surgery for these lesions is difficult as compared to other parenchyma metastases owing to their deep location and complicated vascular anatomy in the region. We report a case of solitary intraventricular metastasis resembling a meningioma <sup>[1, 2]</sup>.

### Case

A 55 yr old farmer was admitted to our department in June 2012 with complaints of headache and vomiting. There were no signs of metastatic lesions of liver, lungs or bones. Except for right temporal field defects on visual charting rest of the neurological examination was normal. MRI brain with contrast, showed Isodense to Hypodense lesion in the right posterior parietal region with intraventricular extension on T1W images with good post contrast enhancement. There was significant edema on FLAIR images. CT Brain with contrast, showed a ring enhancing lesion with significant perilesional edema in right posterior-parietal and temporal region with intraventricular extension. Rest investigation including chest radiograph was normal.

Right parieto-occipital craniotomy was done. On opening the dura, corticotomy was done posterior and inferior to sensory cortex. The tumor was seen attached to the choroid plexus of occipital horn. The tumor was very vascular; reddish in colour, complete excision of the lesion was achieved. The patient improved postoperatively with minimal improvement in vision. Histopathological examination revealed metastatic carcinoma composed of epithelial cells with high mitotic index. The patient was re-evaluated and HRCT of the lungs showed a lesion (although chest x-ray done preoperatively was apparently normal) on the right side. CT guided biopsy of the lesion was suggestive of squamous cell carcinoma. The patient was advised radiotherapy and chemotherapy at specialized centers.

### Discussion

Brain metastasis is the most common intracranial tumour. Lung cancer is the most common source of brain metastasis in men, whereas breast cancer is the most common source in women.

Primary lung tumors account for 30% to 60% of all brain metastasis cases. Adenocarcinoma of lung is more likely to metastasize than squamous cell carcinoma and 45% are solitary [2].

The tumors of lateral ventricle arise from the walls of the ventricle or tissues within and around the ventricle notably choroid plexus, septum pellucidum and thalamus. Most of the tumours are low grade and slow growing which includes astrocytoma, oligodendroglioma, choroid plexus papilloma, meningioma. Few of them are highly malignant like malignant ependymoma and choroid plexus carcinoma. Metastasis accounts for a rare differential diagnosis of intraventricular mass. True intraventricular metastases arise within the ventricle, while paraneural metastasis, which protrudes into the ventricle are nodular deposits, seen in meningeal carcinomatosis and these should not be classified as intraventricular metastasis. These comprise about 0.9% of all brain metastases. Single intraventricular (IV) metastases were found in 0.14% cases. In the lateral ventricle also, it is the region of trigone which remained the commonest site, possibly due to the high vascularity of choroid plexus. Most of these patients present with features of non-localized raised intracranial pressure like headache, vomiting and altered sensorium [1].

Treatment options available are surgical excision, radiotherapy and radiosurgery. Surgery appears to be superior to radiotherapy in single brain metastasis because of the rapidity with which the lesion is removed, ability to get tissue for histopathological diagnosis, rapid reversal of symptoms and specific treatment depending on tumour histology. Surgery has certain advantages over other treatments. First, complete excision of a metastatic lesion provides palliation by immediately eliminating the effects of increased intracranial pressure and the direct irritation of surrounding brain tissue. Second, surgery provides tissue to confirm the diagnosis of metastasis. Surgery may provide local cure if all the tumor cells are removed. These advantages must be weighed against the requisite invasiveness of surgery, which subjects patients to potential intraoperative and postoperative problems, including bleeding, wound infection, pulmonary emboli, myocardial infarction, and sepsis. Patients with single brain metastases are the most appropriate surgical candidates [2].

High-dose corticosteroids constitute the initial treatment of patients with symptomatic brain metastases, with the objective of decreasing the edema that typically surrounds these tumors and helping to restore neurological function. Systemic chemotherapy is not very effective against the most common types of primary tumors metastasizing to the brain, which tend to be chemoresistant; however, it appears to be a useful adjunct to other therapies against metastases from SCLC and germ cell tumors. The major weapons in the clinician's arsenal against brain metastases include whole-brain radiation therapy (WBRT), surgical resection by open craniotomy, and stereotactic radiosurgery (SRS) [2].

Our patient had a single lesion mimicking meningioma and later was proved to be a metastasis from a lung primary.

### Conclusion

Metastasis should be considered in the differential diagnosis for patients presenting a single intraventricular lesion as it is the most common intracranial space occupying lesion.

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