

Choroid Plexus Metastasis From Carcinoma of the Bladder: A Case Report

Mesane Karsinomunun Koroid Pleksus Metastazı: Olgu Sunumu

ABSTRACT

Metastatic tumours in the choroid plexus are generally considered to be very rare. We report a case of bladder carcinoma metastasizing to the choroid plexus of the trigone of the lateral ventricle. This tumour was shown by computed tomography and magnetic resonance imaging of the brain, followed by stereotactic biopsy and histological confirmation. Systemic investigation revealed bladder carcinoma. The differential diagnosis for intraventricular masses should include metastasis.

KEY WORDS: Brain, choroid plexus, intraventricular, metastasis, tumour

ÖZ

Koroid pleksus metastazı nadiren görülür. Bu çalışmada, bilgisayarlı beyin tomografisi ve magnetik rezonans görüntüleme koroid pleksusda kitle tespit edilip stereotaktik biopsi uygulanan ve patoloji sonucu karsinom metastazı olarak rapor edilen bir olgu sunuldu. Sistemik tetkikler sonucu olguya mesane karsinomu teşhisi konuldu. İntraventriküler kitlelerin ayırıcı tanısında metastazın da olabileceği mutlaka göz önünde tutulmalıdır.

ANAHTAR SÖZCÜKLER: Beyin, intraventriküler, koroid pleksus, metastaz, tümör

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INTRODUCTION

Metastasis to the brain is principally haematogenous and usually presents as multifocal parenchymal lesions. It is rare to have the choroid plexus (CP) involved in a metastatic brain lesion (1,4,6). Metastatic lesions of the CP appear to be primarily parenchymal with secondary extension into the CP, or multiple parenchymal lesions with CP metastasis or solitary CP metastasis (6).

We present here an unusual case of metastasis to the CP from the bladder and review the differential diagnosis of choroid plexus masses.

CASE REPORT

A 52-year-old man was admitted to our hospital with a history of seizure and headaches. Neurological examination and laboratory results were normal. Precontrast computed tomography (CT) scan of the brain revealed a hyperdense mass in the right lateral ventricle without ventricular dilatation (Figure 1). Magnetic resonance imaging (MRI) of the brain demonstrated the right intraventricular mass as a low-intensity area on the T1-weighted image (Figure 2). The right CP mass of the lateral ventricle enhanced after intravenous gadolinium on the T1-weighted image (Figure 2). Stereotactic biopsy was carried out on the intraventricular mass. Histological examination of the tumor revealed metastatic carcinoma. Systemic investigation and CT of the pelvis revealed bladder carcinoma. Postoperatively, radiotherapy and chemotherapy were used for treatment. The patients



Figure 1. Noncontrast axial CT scan showing a hyperdense mass in the right lateral ventricle (arrow head).

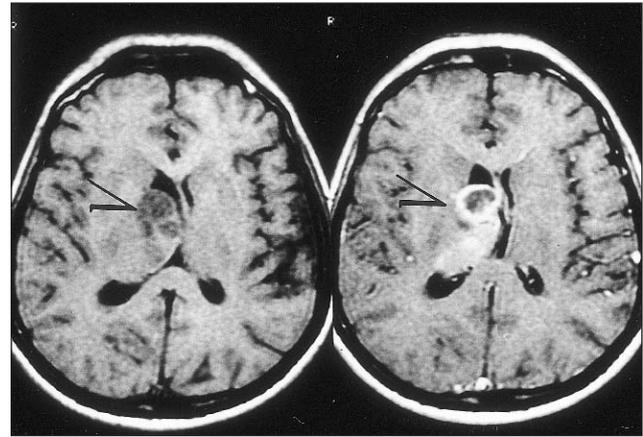


Figure 2. A T1-weighted axial MRI showing a right intraventricular mass as a low-intensity area (on the left), moderate enhancement following intravenous gadolinium (on the right) (arrow head).

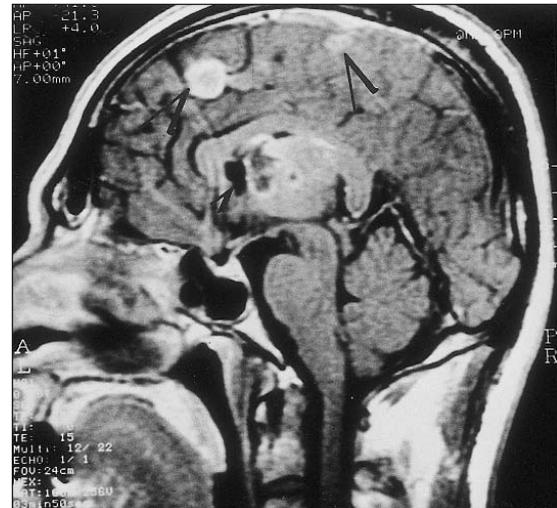


Figure 3. A T1-weighted sagittal MRI showing multiple enhancing intracranial masses after intravenous gadolinium (arrow).

was readmitted a month later for general convulsions and mental status changes. MRI on his second admission showed multiple masses (Figure 3) and he died of pneumonia.

DISCUSSION

Metastasis to the choroid plexus accounts for only 0.9% of clinically evident intracranial metastases (1,3,6). In autopsy series, metastasis to the choroid plexus is identified in 2.6-4.6% of cases of malignant extracranial neoplasms (1,3,6). A metastasis to the CP may be missed in a significant number of patients. We reviewed the literature and found only 17 cases of solitary metastasis to the choroid plexus (5,6). Our

case is the second report of such a metastasis in association with bladder carcinoma. Systemic metastases frequently occur in patients with carcinoma of the bladder but involvement of central nervous system is relatively uncommon: less than 1% of patients with carcinoma of the bladder present with an intracerebral metastasis (5).

Intraventricular metastases most frequently involve the trigone of the lateral ventricle, where they usually arise from the choroid plexus. There are two potential mechanisms of spread to the choroid plexus: hematogenous via anterior or posterior choroidal arteries, and dissemination through the cerebrospinal fluid (CSF) (1,3). Carcinoma of the kidney and lung represent the largest number of cases with metastasis to the CP (6). Other extra-neural tumours that metastasize to the CP of the brain are melanoma, neuroblastoma, lymphoma, stomach, bladder, breast, and colon carcinomas (1,3,5,6). Metastasis to the CP in children from extracranial tumours is more unusual than in adults. The tumors in this group are Wilms, retinoblastoma, and neuroblastoma (6).

MRI is most useful in evaluating tumor location, size and extent, but doesn't help in eliminating alternative diagnoses. The lesions in our case showed moderate enhancement after intravenous gadolinium (Fig. 2). This finding and adjacent atrial parenchymal edema is characteristic of metastatic lesions to the CP (1,4,6). Solitary CP metastasis should be especially distinguished from a meningioma, CP papillomas and carcinomas. Important features for differential diagnosis include the age of the patient, the tumor's location within the lateral ventricle, and density on cranial CT or MRI before and after administration of contrast material. CT is more effective than MRI for the demonstration of calcifications of the tumor. Calcification of the tumor is seen in intraventricular meningiomas (1,4). Papillomas or carcinomas are ordinarily seen in children or young adults, whereas metastasis is seen in older adults (4). Choroid plexus papillomas appear as well-circumscribed, densely

enhancing masses within the trigone and are associated with the choroid plexus (1,2,4). Their frondlike projections and associated hydrocephalus are characteristic (4). Frondlike projections are not seen in meningiomas and metastasis. Any hydrocephalus or metastasis that occurs in meningiomas is usually localized to the ipsilateral ventricle, whereas CP papillomas cause all of the ventricles to enlarge because of overproduction of CSF (1,2,4,6). Meningiomas occur more frequently in patients older than the age of 30 years, especially in the third to sixth decades of life (4). In adults, the adjacent atrial parenchymal edema may not be such an important feature for differentiating CP metastasis from meningioma because more than 50% of CP meningiomas can have periventricular edema (1,4,6).

CONCLUSION

The differential diagnosis for intraventricular masses should include a metastasis. The prognosis for these patients is variable, depending on the resectability of the lesion and the presence of other central nervous system or systemic metastases.

References

1. Jelinek J, Smirniotopoulos JG, Parisi JE, Kanzer M: Lateral ventricular neoplasms of the brain: differential diagnosis based on clinical, CT, and MR findings. *AJNR* 11: 567-574, 1990
2. Kendall B, Reider-Grosswasser I, Valentine A: Diagnosis of masses presenting within the ventricles on computed tomography. *Neuroradiology* 25: 11-22, 1983
3. Kohno M, Matsutani M, Sasaki T, Takakura K: Solitary metastasis to the choroid plexus of the lateral ventricle. Report of three cases and review of the literature. *J Neurooncol* 27: 47-52, 1996
4. Piepmeier JM, Westerveld JM, Spencer DD, Sass K: Surgical Management of Intraventricular Tumours of the Lateral Ventricles, in Schmidek HH, Sweet WH (eds), *Operative Neurosurgical Techniques: Indications, Methods, and Results*, Philadelphia: W.B. Saunders Company, 1995:725-738
5. Qasho R, Tommaso V, Rocchi G, Simi U, Delfini R: Choroid plexus metastasis from carcinoma of the bladder: case report and review of the literature. *J Neurooncol* 45: 237-40, 1999
6. Raila FA, Bottoms WT Jr, Fratkin JD: Solitary choroid plexus metastasis from a renal cell carcinoma. *South Med J* 91: 1159-62, 1998