

# METASTATIC SPINAL INTRAMEDULLARY MEDULLOBLASTOMA

## Case Report

M. Nuri Arda, M.D., Halit Koçak, M.D., Nezh Oral, M.D., Ahmet Çerezci, M.D.

Department of Neurosurgery, Social Security Hospital, Ankara

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### SUMMARY :

*Cerebellar medulloblastomas are the commonest malign tumors of the posterior fossa in childhood and they frequently metastasize. Tumor metastasis can be seen along the neural axis, lymph nodes, soft tissues, bones and distant organs. Spinal cord metastases are usually located in the extramedullary regions. Intramedullary metastatic medulloblastoma is very unusual.*

*In this paper, a child with a spinal intramedullary metastatic medulloblastoma seen in the fourth year after the first operation is presented.*

### KEY WORDS :

*Medulloblastoma, spinal cord tumor, spinal intramedullary metastasis.*

### INTRODUCTION

Many intracranial malign tumors including glioblastomas, malign astrocytomas, medulloblastomas, some of the pineal region tumors and ependymomas have a high potential for metastasis (3,4,11). These tumors usually spread via the cerebrospinal fluid pathways and locate on the surface of the spinal cord. Pure intramedullary location of a metastatic mass from medulloblastoma is a very rare pathological condition and the mechanism is still speculative.

### CASE REPORT

A 4-year-old boy was operated in our clinic on December 6, 1985 because of cerebellar medulloblastoma located in the fourth ventricle (Figure 1). The tumor had been totally removed and pathological examination proved it to be a medulloblastoma. The postoperative period was uneventful. The patient received craniospinal irradiation and was followed up from May 1986 to October 1988. During which time neither neurological deterioration nor radiological tumor recurrence had been observed.

The patient was normal until January 1989. He complained of neckache and weakness of both the upper and lower extremities on the right side when he was in the fourth year after the first operation. Slight hemiparesis, hypoesthesia to the level of Th1 and hyperactive reflexes on the right were found at neurological examination. Conventional myelogram (Figure 2) showed an intramedullary total block at

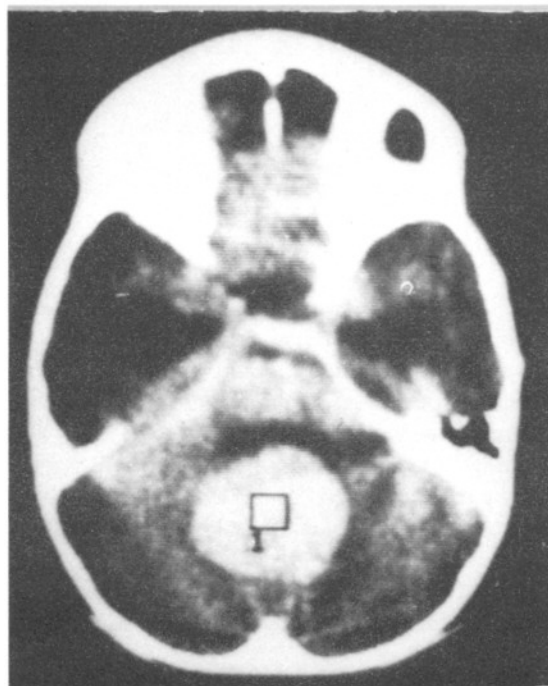


Fig.1 : CT scan showing cerebellar medulloblastoma in the fourth ventricle.

the C4-C5 level while cervical X-Rays and cranial computed tomographies were normal. We were not able to see any extramedullary pathology in the spinal computed tomographies (Figure 3). The patient was operated upon on January 25, 1989 and C3-C4-C5

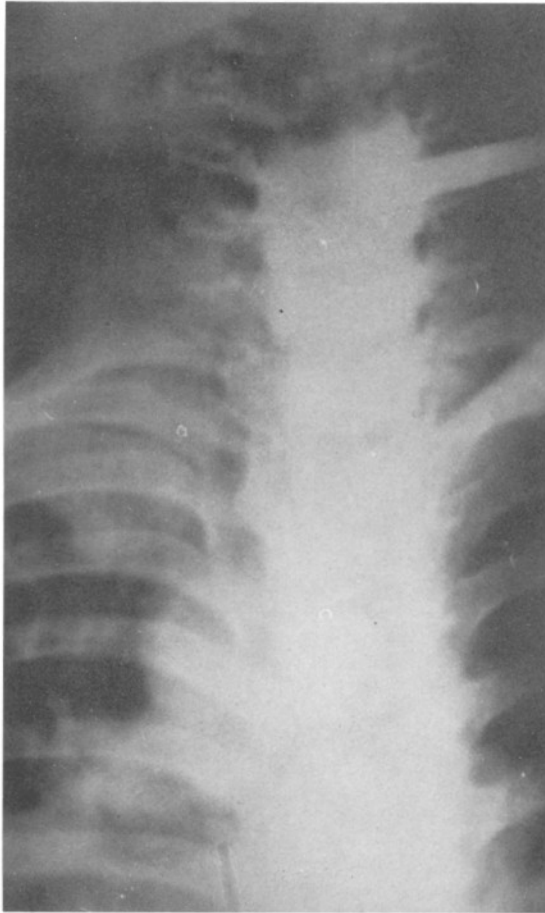


Fig.2 : Myelogram showing a total block at C4-C5 level

total laminectomies were performed. There was no epidural pathological lesion. Spinal cord pulsation could not be seen. The dura mater was opened. The subdural space was also intact and the spinal cord seemed to be widened on the level of C4. After performing a median myelotomy the tumor was seen. Only a biopsy material could be taken from the tumor tissue because of its critical location. Pathological studies showed that the tumor was a medulloblastoma. The neurological status of the patient did not change in the postoperative period.

## DISCUSSION

Medulloblastomas are the commonest important posterior fossa tumors of childhood and are rarely seen in adults. According to Kepes (10) childhood and adult forms of medulloblastoma are not significantly different as far as prognosis is concerned.

According to a study of 8000 primary central nervous system tumors, medulloblastomas are second

only to glioblastomas in incidence of distant metastatic spread (13). Medulloblastomas usually metastasize to the spinal cord and locate on the surface of the leptomeninges (3,4,11). Excluding the central nervous system, medulloblastomas frequently metastasize to lymph nodes, bones and distant organs (3) and less frequently to the lungs (4).

In the literature there were 148 cases of intramedullary spinal cord metastases up until December 1987 (7). The primary focus in the majority of these cases was outside the CNS. We were able to find only two cases with purely spinal intramedullary metastatic medulloblastoma seen after surgical intervention for cerebellar medulloblastoma (13,2). Deutsch (5) had three patients in whom the presence of positive CSF cytology for medulloblastoma was proved. In addition, in two of these patients myelograms disclosed an intramedullary lesion. Our patient is the third case which has been surgically biopsied and pathologically verified. Although medulloblastomas spread along the CSF pathways, other accepted modes of tumor spread to the spinal cord may include arterial and venous routes (6,13,2). Sometimes spinal dural infiltration may occur in the absence of either local recurrence in the posterior fossa or systemic metastases. This event suggests then spinal dural penetration can be the first focus of systemic metastasis (1). Our patient had neither tumor recurrence in the posterior fossa nor systemic metastasis which could be proved radiologically. The location and distribution of metastatic medulloblastomas can be determined in part by such factors as gravity, CSF flow rate and surgical manipulation of the primary tumor bed (12). Zumpano (13) and Barnwell(2) suggested that metastatic intramedullary spread of medulloblastoma can be explained on the basis of direct extension from a primary cerebellar medulloblastoma to an enlarged spinal central canal due to accompanying hydrocephalus.

Myelography (9), computed tomography (CT) and Magnetic Resonance Imaging (MRI) can be used in the diagnosis of metastatic intramedullary tumors. Comparing these procedures, MRI has more diagnostic value than the others (8). CT scans were negative in our patient and the diagnosis was made by conventional myelography in the absence of MRI.

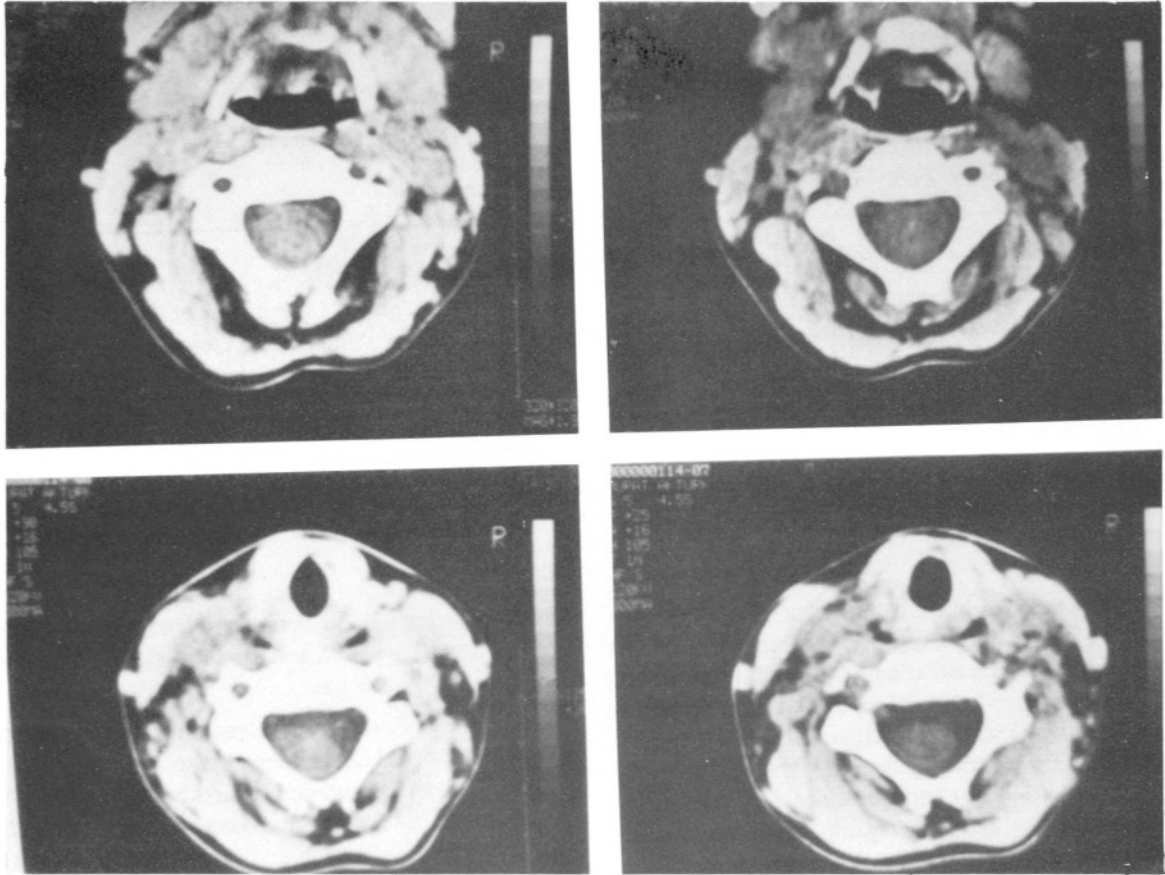


Fig.3 : Spinal CTs including the slices at levels C3 to C5. The CTs are considered to be completely normal.

**Correspondence :** Nuri Arda, M.D.,  
Kenedi Caddesi 142/7  
Gaziosmanpaşa/ANKARA

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