# Brainstem Tuberculoma: Case Report

ZEKİ İPEKOĞLU, KAYA AKSOY, AHMET BEKAR, ŞEREF DOĞAN

Department of Neurosurgery, Uludağ University, School of Medicine, Bursa - Türkiye

**Abstract**: Brainstem localizatin for tuberculomas is rare. A case diagnosed and operated in our department was presented due to its localization property. He had 19 months of follow-up period and showed a certain amelioration.

Key Words: Brainstem, Tuberculoma

## INTRODUCTION

In developing countries, 5 to 8% of space-occupying lesions of the central nervous system (CNS) are caused by tuberculomas (1). Among these, brainstem localization is rare and if extra cranial tuberculosis is not found, preoperative diagnosis can be extremely difficult (5). Although computerized tomography (CT) and magnetic resonance imaging (MRI) my be helpful in diagnosis, there is no imaging technique that can differentiate tuberculomas reliably from other intracranial mass lesions. A case diagnosed and operated successfully in our department with 19 months follow-up is presented.

#### CASE REPORT

A 29-year-old man was admitted to hospital with symptoms of headache, dysphasia and left hemiparesis. Past history showed a diagnosis of pulmonary tuberculosis with the initiation of anti tuberculosis therapy 3 months previously. On physical examination the left hemithorax was unable to assist ventilation and diffuse ronchus was apparent on oscultation. Neurological examination revelated multiple cranial nerve palsies with

3.5.6.9.10.11 on the right and 6.9.10 on the left. left hemiparesis including the face, horizontal nystagmus, static and kinetic dysequilibrium with cerebellar signs. A chest x-ray showed fibrocalcific changes in both apices. Cranial CT revealed a mass lesion in the brainstem with a multiloculated isohypodense core, surrounding oedema and dense border during contrast enhancement and apparent fourth ventricle compression (Fig. 1). By the evaluation of the case it was highly suspicious for a tuberculoma in brainstem localization since there was a previous history of pulmonary tuberculosis.

Medical therapy was arranged with close clinical and tomographic follow-up. As there was no responce to medical therapy the patient underwent a sub-occipital craniectomy. On operation the pons was seen to be asymmetrically swollen. A 3 mm incision was made for pons in the midline and cystic and calceous material was drained. Histopathological examination confirmed tuberculosis and thi patient was followed with serial CT scans. Nineteen months after the operation, neurological examination showed only horizontal nystagmus and CT obtained at the same time showed complete resolution of the lesion (Fig. 2).

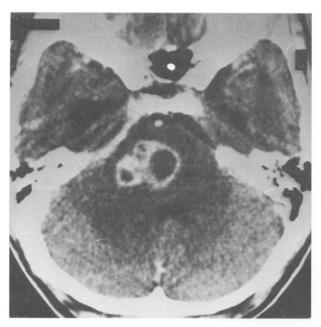


Fig. 1: Preoperative cranial CT showing a mass lesion in the brainstem with a multiloculated isohypodence core, surrounding oedema and dense border during contrast enhancement, and apparent fourth ventricle compression.

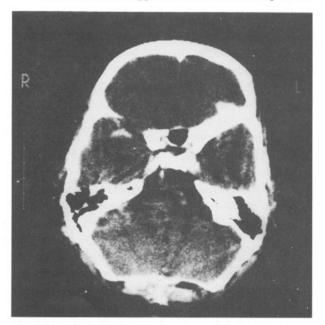


Fig. 2: Postoperative Cranial CT (19 months after operation) showing resolution of the lesion.

## DISCUSSION

CNS tuberculoma is a rare form of extrapulmonary tuberculosis and is frequently a result of haematogenous spreading from a primary focus, characteristically most often the lung (8). Supratentorial tuberculomas occur most frequently in adults and infratentorial tuberculomas in children (8). CNS tuberculomas are most frequently reported from developing countries (4). As in our case previously known pulmonary tuberculosis may force a neurosurgeon to think about an intracranial mass lesion as a tuberculoma. Systemic tuberculosis was found in 55 % of brainstem tuberculomas (7), Cerebral tuberculoma is a disease of young adults (below 30 years-old) and sex distribution is equal (2). There is no specific CT finding for tuberculomas (9) whereas MRI may give more specific information (3.4). Antituberculosis therapy and serial CT scans must be the first choice of treatment. If the lesion is unresponsive to medical treatment or if elevated intracranial pressure is present, surgery must be considered (6).

The brainstem is a rare localization for tuberculosis but it must be always kept in mind that in a case with a previous history of tuberculosis and an intracranial space occupying lesion, tuberculoma may be the diagnosis.

Correspondence : Kaya Aksoy MD

Department of Neurosurgery.
Uludağ University School of Medicine
Bursa - Türkiye
Telephone: 224.442 80 81

#### REFERENCES

- 1. Bouchama A. Al-Kawi MZ, Kanaan I, Coates R, Jallu A, Rahm B, Siqueira EB: Brain biopsy in tuberculoma: The risks and benefits. Neurosurgery 28:405-409, 1991.
- Draouat S, Abdenabi B, Chanem M, Bourjat P: Computed tomography of cerebral tuberculoma. J Comput Assist Tomogr 11:594-597, 1987.
- Gupta RK, Jena A, Sharma A: MR imaging of intracranial tuberculomas. J Comput Assist Tomogr 12:280-285, 1988.
- Gupta RK, Jena A, Singh AK, Sharma A, Puri V, Gupta M: Role of magnetic resonance in the diagnosis and management of intracranial tuberculomas. Clinical Radiology 41:120-127, 1990.
- Mayers MM, Kaufman DM, Miller MH: Recent cases of intracranial tuberculomas. Neurol 28:256-260, 1978.
- Sato M, Matsude I, Kamijyo Y, Handa J, Nagai A, Nakao Y: Multiple cerebral tuberculomata involving brain-stem and cerebellum. Report of a case. No To Shinkei 32:403-406, 1980.
- Talamas O, Del Brutto OH, Garcia Ramos G: Brain stem tuberculoma. An analysis of 11 patients. Arch Neurol 46:34-38, 1989.
- Turgut M, Özcan OE, Özgen T, Sağlam S, Bertan V, Erbengi A: Tuberculomas of the craniospinal axis. Türkish Neurosurgery 1:34-38, 1989.
- Vengsarkar US, Pisipaty RP, Parekh P: Intracranial tuberculoma and the CT scan. J Neurosurg 64:568-574, 1986.