

SPINAL TUBERCULOUS ARACHNOIDITIS AN UNUSUAL OCCURENCE

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RÉSUMÉ : L'arachnoïdite spinale tuberculeuse est une des manifestations de la tuberculose du système nerveux central. Elle peut être consécutive à une méningite tuberculeuse ou bien à une dissémination d'une tuberculose systémique. Nous rapportons le cas d'une patiente âgée de 22 ans ayant présenté une arachnoïdite spinale tuberculeuse alors qu'elle était traitée depuis 3 mois pour tuberculose pulmonaire. Elle a été guérie après poursuite du traitement anti tuberculeux. Ce cas est rapporté pour souligner la possibilité d'apparition d'une atteinte du système nerveux central durant un traitement pour tuberculose systémique et de ce fait il devient donc important de reconnaître cette complication à temps.

Mots clés : *Spinal, Tuberculose, Arachnoïdite, Traitement antituberculeux.*

ABSTRACT : Spinal tuberculous arachnoiditis is one of the presentations of tuberculosis of central nervous system. It can occur after extension of intracranial tuberculous meningitis or after a hematogenous dissemination of systemic tuberculosis. We report a case of spinal tuberculous arachnoiditis occurring in a 22-year-old woman who was treated during 3 months for pulmonary tuberculosis. She was successfully treated by antituberculous chemotherapy. This case is reported to emphasize the possibility of occurrence of central nervous system involvement during treatment for systemic tuberculosis and then a high level of awareness is mandatory during monitoring of patients with systemic tuberculosis.

Key words : *Spinal, Tuberculous, Arachnoiditis, Antituberculous chemotherapy.*

INTRODUCTION

Spinal tuberculous arachnoiditis is a rare disease [1] which is still a cause of disability. It is represented by a thickening of leptomeningeal structures around the spinal cord and nerve roots [2]. Clinical features are represented by a spinal cord and/or nerve roots compression. Treatment is medical with or without surgery and recovery depends on duration of symptoms [3]. We report a case of spinal tuberculous arachnoiditis occurring in a young patient who was treated for pulmonary tuberculosis.

CASE REPORT

A 22 years old woman was referred to our department for progressive weakness of legs lasting for 15 days. 3 months before she had a spinal anesthesia for delivery and 10 days after she had presented a hyperthermia with asthenia. Imaging concluded to pulmonary tuberculosis and she had antituberculous treatment.

Clinical examination revealed paraparesis with deep tendon reflex abolished. There

was no sensory impairment and no urinary or bowel dysfunction.

MRI images demonstrated leptomeningeal disease in the spinal cord from C7 to sacrum (shaggy enhancement of the arachnoid mater and lumbar nerve roots) (Fig. 1).



Fig.1. a : Sagittal MRI contrast-enhanced T1W1 of cervico-thoracic spine showing posterior linear and plaque-like meningeal enhancement.
b/ Sagittal MRI contrast-enhanced T1W1 of lumbo-sacral spine showing an anterior and posterior meningeal enhancement with extension to the end of the dural sac.

We performed a lumbar puncture. Results showed a lymphocytic pleocytosis (110 cells/mm²), elevated protein concentration (128 mg/dl) and low glucose concentration (47mg/dl). Regarding history of the patient, imaging and results of CSF study we concluded to the diagnosis of tuberculous spinal arachnoiditis. We performed then a cranial CT scan which was normal. We have observed a regression of symptoms the first day after lumbar puncture. The antituberculous treatment was continued without steroids and she had a total recovery. Control MRI at 5 months showed a marked regression of the leptomeningeal disease and the patient is free of symptoms at 36 months of follow-up.

DISCUSSION

Tuberculosis is still a frequent disease in developing countries and is resurging in developed countries because AIDS. Central nervous system is thought to be around 10% [4].

Spinal tuberculous arachnoiditis is one of the consequences of this disease. It has been also called: intradural extramedullary tuberculosis, chronic adhesive arachnoiditis or tuberculous radiculomyelopathy [5]. Thoracic spine is mostly concerned by this disease [6] followed by the lumbar and the cervical regions. Our patient had an involvement of the spine from C7 to sacrum. It is thought that spinal tuberculous arachnoiditis occur after: a tuberculous lesion primarily arising in the spinal meninges, an extension of tuberculous intracranial meningitis or an extension of tuberculous spondylitis [1]. We can suppose that the present case is the consequence of a hematogenous dissemination since she did not presented signs of intracranial meningitis [7]. Some cases can occur without history of systemic tuberculosis. Our patient was treated for pulmonary tuberculosis. During spinal tuberculous arachnoiditis, exudates is localized around the spinal cord and nerve roots and causes obstructions of the subarachnoid space with formation of pockets where CSF is entrapped [1].

Generally, these lesions appear on MRI as extensive enhancement of arachnoid matter and nerve roots with cystic component in some cases [8]. Diagnosis is made on the base of clinical, radiological and biological findings. Our patient had a history of pulmonary tuberculosis, signs of spinal cord compression, multiple arachnoid lesions

with strong enhancement and high levels of proteins and lymphocytic pleiocytosis at CSF examination. One can be surprised by the occurrence of a spinal arachnoiditis in a patient who is treated for systemic tuberculosis. This has been yet reported in literature.

One explanation is the rare phenomenon of atypical response to medical treatment in neurotuberculosis [4, 9]. It can also explained by a drug resistance during the treatment period [7] ; but our patient had the same treatment till she was cured. It seems also that development of spinal tuberculous arachnoiditis during antituberculous treatment can be in relation with complex immunologic conflicts involving the treatment itself [2].

Medical treatment is the mainstay of management [1]. Antituberculous chemotherapy with high doses of steroids is the best option [7, 10]. Antituberculous drugs must be continued for 9 to 12 months [1]. Medical treatment should be administrated as soon as possible to avoid permanent deficits. Surgery is considered when histology is needed or in cases with spinal cord compression [5]. We have discussed surgery for our patient at the admission because neurologic deficit but we have deferred it when she has presented clinical improvement after lumbar puncture. We have supposed that this later can be considered as a minimal decompression since we have had improvement immediately after it.

CONCLUSION

Spinal tuberculous arachnoiditis is a rare disease which can cause disabilities. Diagnosis is based on clinical, imaging, and biological findings and should be done early. Prompt antituberculous treatment should be initiated with high doses of steroids to avoid permanent deficits. Surgery must be considered in cases with spinal cord compression. Occurrence of spinal tuberculous arachnoiditis can be observed during treatment for systemic tuberculosis; and then one must pay attention to this to give the correct treatment in time.

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