MILIARY BRAIN TUBERCULOMAS CONCOMITANT WITH CONUS MEDULLARIS TUBERCULOMA. CASE REPORT

Mamoune El Mostarchid∗,1, Zakaria Chandide Tlemcani∗, Imadeddine Sahri∗, Abderrahmane Housni∗, Asri Abbad Chrif∗ and Miloud Gazzaz∗

∗Department of Neurosurgery, Mohammed V Military Teaching Hospital of Rabat Morocco.

ABSTRACT Miliary brain tuberculomas are very rare even in area tuberculosis is endemic. Intra-medullary tuberculomas are rare and constitute only 0.2-5% of all CNS tuberculomas. The combination of intracranial and intramedullary tuberculomas is extremely rare and only few cases have been reported in the literature so far. We report a very rare case of miliary brain tuberculoma with approximately 40 small lesions 2 to 4 mm in diameter, concomitant with intramedullary conus tuberculoma. The literature is reviewed. Associated brain miliary and intramedullary tuberculoma can be symptomatic, but some time can be a radiological incidental finding. We believe that craniospinal MRI screening must be done in diffuse tuberculomas.

KEYWORDS brain miliary tuberculomas, 40 lesions, MRI, intramedullary conus tuberculomas

Introduction

Brain tuberculomas can exhibit many different clinical and radiological patterns. Miliary brain tuberculomas are very rare, even in areas tuberculosis is endemic. Intra-medullary tuberculomas are rare and constitute only 0.2-5%. We report a rare case of miliary brain tuberculoma with approximately 40 small lesions 2 to 4 mm in diameter concomitant with intramedullary conus tuberculoma. The literature is reviewed.

Case report

A 20-year-old female immunocompetent patient was referred to our institution to alter the general health condition, weight loss and loss of appetite for the past two months. His medical history was unremarkable. On admission, she was apyretic. Her weight (48 kg) and height (160 cm). There was no focal neurological sign on examination. Meningeal signs were absent. However, she was slightly confused, lethargic and unable to stand or sit without support. Other systemic examinations were unremarkable. Examination of the abdomen, extremities, and skin was insignificant. The cardiopulmonary examination was normal. Haematological investigation revealed anaemia (Hemoglobin – 9.5 gm/dl), the leucocyte count was 7,500/mm³, and the erythrocyte sedimentation rate (ESR) at the end of 1 h was 90 mm. C-Reacting protein was 120 mg/l. HIV and VDRL were negative. Intradermal reaction to the tuberculin test was positive. Brain post-contrast magnetic resonance imaging (MRI) showed: multiples small lesions 2 to 4 mm in diameter in the brain parenchyma like millets in the cerebral hemispheres, left lateral intraventricular plexus choroid, bilateral cerebellum, and brain stem. In addition, there was some conglomerate in the sellar and suprasellar region and meningeal enhancement in ambient perimesencephalic cisterna (Figure 1). The pan-medullary MRI showed two isointense nodules at the level of conus in T1, and T2-weighted images showed ring enhancement at the periphery (target sign). The lesions were at D12 and L1 Levels. (Figure 2). There was no abnormality in the vertebral bodies or the paraspinous soft tissues. The conclusion was brain military and conus medullary tuberculoma. The medical treatment with four-drug antitubercular therapy was...
immediately started. Corticosteroid therapy was associated with antiepileptic drugs. Family screening for tuberculosis detected sputum positive for pulmonary TB in the mother. The patient was referred to pneumo-physiologists for follow-up according to the national guideline program of management of tuberculosis.

Discussion

Tuberculoma of the brain is a major neurological problem in developing countries accounting for 12 to 30 per cent of all intracranial masses [5-8]. However, miliary brain tuberculomas are rarely seen in patients with CNS tuberculosis, especially in adults.

Our patient presented concomitant brain miliary tuberculoma with asymptomatic intramedullary tuberculoma. MRI has shown the disseminated tuberculoma in this case without immunodeficiency.

This finding is very rare, even in epidemic tuberculosis areas. Jaiswal M and al. [1] in 2017, can find few cases in the literature. Ghane VR and al. [9] reported 11 coexisting spinal intramedullary and intracranial tuberculomas.

The dissemination of tuberculoma was in supratentorial, infratentorial, in the right plexus choroid of lateral ventricle and suprasellar cisterna with meningeal enhancement. The infratentorial nodules were in the brain stem and cerebellum. The diameter of these lesions was 2 to 3 mm. In addition, we were able to count approximately 40 brain lesions in our patient in deep white matter and subcortical area, both supratentorial and infratentorial compartments.

Miliary refers to the size of a millet seed. It is generally used to describe a pattern of multiple punctate uniform enhancements with monomorphic dot-like lesions with a diameter smaller than 3 mm. The lesions are distributed diffusely in the brain parenchyma in the supratentorial and infratentorial compartments. Most patients had more than 20 lesions at the same level, but some had more than 50 lesions [8,10,11,12]. After gadolinium injection, the lesions measured approximately 2–4 mm in diameter and exhibited ring or nodular enhancement. Most were surrounded by oedema within the white matter. The designation miliary is descriptive, non-specific concerning etiology, and it may be due to a variety of underlying conditions, ranging from inflammatory, infectious, nutritional to neoplastic processes [8].

Spinal intramedullary tuberculoma is an uncommon disease. Intra-medullary tuberculomas are rare and constitute only 0.2-5% of all CNS tuberculomas. The combination of intramedullary and intracranial tuberculomas is extremely rare, and only a few cases have been reported in the literature so far [10-13].

Associated brain military and intramedullary tuberculoma can be symptomatic but sometimes can be an incidental finding. We believe that craniospinal screening must be done in diffuse tuberculomas [10-12]. The clinical and imaging features combined with the classical haematological findings and epidemiological suggest tuberculous etiology. Recently, polymerase chain reaction (for Mycobacterial protein) is helpful. Stereotactic biopsy of brain tuberculoma is a helpful option to confirm tuberculosis. Surgery in intramedullary tuberculoma is indicated in patients with large lesions causing significant neurological compression. Conservative medical therapy is an effective, inexpensive, safe, and feasible option, especially in developing countries and resource-poor settings. In addition, anti-tuberculosis drugs are safe and effective.

Funding

This work did not receive any grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest

There are no conflicts of interest to declare by any of the authors of this study.

References

1. Mamoune El Mostarchid et al./ International Journal of Medical Reviews and Case Reports (2021) 5(12):20-22