

# Cervical Pott's Disease C3 C4 in An Immunocompetent Woman: About A Case and Review of the Literature

Masina Ndalana d'Assise, Rakotozanany Patrick Sandra, Bemora Joseph Synèse,  
Ratovondrainy Willy, Rabarijaona Mamiarisoa, and Andriamamonjy Clément

## ABSTRACT

Cervical Pott's disease is a rare localization of spinal tuberculosis. The diagnosis of this affection is most often late which exposes to serious neurological complications. The diagnosis is often delayed by bundles of clinical and biological arguments and aided by the CT scan of the cervical spine. We report a new case of C3-C4 cervical tuberculosis in an immunocompetent woman. The diagnosis was confirmed by the presence of Koch's bacillus (BK) in the gastric fluid after tubing. The treatment is based on the twelve-month anti-tuberculosis drug and a spinal stabilization by cervical osteosynthesis.

**Keywords:** Cervical osteolysis Pott's disease, tuberculosis.

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**M. N. d'Assie\***

Department of Neurosurgery,  
Cenhosoa, Antananarivo, Madagascar.

(e-mail: ndalanamd@gmail.com)

**R. P. Sandra**

Department of Neurosurgery,  
Cenhosoa, Antananarivo, Madagascar.

**B. J. Synèse**

Department of Neurosurgery, CHU-  
JRA, Antananarivo, Madagascar.

**R. Willy**

Department of Neurosurgery,  
Cenhosoa, Antananarivo, Madagascar.

**R. Mamiarisoa**

Department of Neurosurgery, CHU  
Tambohobe Fianarantsoa, Madagascar.

**A. Clément**

Department of Neurosurgery, CHU-  
JRA, Antananarivo, Madagascar.

*\*Corresponding Author*

## I. INTRODUCTION

Pott's disease or tuberculous spondylodiscitis is still a common disease in countries with unfavorable socioeconomic conditions, where it remains a public health problem. It constitutes half of osteoarticular tuberculosis [1]. Thoracic and lumbar locations are the most common. Cervical localization is rare with only 3% of cases [2]. Thus, we report in this study a case of cervical Pott's disease located at the C3 level in an immunocompetent woman.

## II. OBSERVATION

This is a 58-year-old woman, seamstress, history of tuberculosis, was admitted on 08/14/2019 to the neurosurgery department of CHU-Tambohobe Fianarantsoa for flaccid quadriplegia. The interrogation revealed a notion of cervical pain of moderate intensity of progressive onset evolving for six months with left hemiparesis. She received medical treatment from her attending physician, but without clinical improvement. Sudden worsening of the general condition by tetraplegia and increase in cervical pain following cervical massage by a traditional healer. *Le tout évoluant dans un*

*contexte d'amaigrissement non chiffré et apyrétique.* The clinical examination of August 14, 2019 objectified a well-conscious patient, Glasgow score 15, afebrile, presenting tetraplegia with sensory and motor level at C5; absence of anal sensitivity and sphincter tone. Standard radiography of the cervical spine in lateral view (Fig. 1): objectified significant osteolysis of the C3-C4 bodies. CT scan of the cervical spine without injection (Fig. 2 and 3) confirmed the presence of osteolytic involvement of the C3 and C4 vertebral bodies with narrowing of the medullary canal of 6mm. The chest X-ray (Fig. 4) visualized a heterogeneous rounded left axillary opacity in favor of a tuberculous cavern, associated with a few apical micronodules. This rounded nodular image suggests caseous necrosis. The thoraco-abdomino-pelvic CT scan (Fig. 5) revealed the presence of nodules and branching micronodules of infectious appearance on the two pulmonary fields, predominant on the upper lobes, an excavated lesion with a thick and irregular wall in contact with the pleura in lingular region and a left pleural effusion blade. Abdominopelvic and thyroid ultrasounds were normal. The results of the biological examinations showed the presence of Koch's Bacillus (BK) in the gastric fluid after intubation, a biological inflammatory syndrome with CRP raised to

20.9 mg, the cytobacteriological examination of the urine isolated *Escherichia coli* but absence of the Koch's bacillus and negative HIV serology by rapid diagnostic test. The diagnosis of Pott's disease or tuberculous spondylodiscitis of the cervical spine was retained. Cervical immobilization with a Philadelphia-type cervical collar was placed pending surgery to decompress the marrow and stabilize with C2-C4 osteosynthesis with placement of an iliac graft at level C3 after corpectomy. Antituberculosis polychemotherapy (Rifampicin, Isoniazid, Pyrazinamide and Ethambutol) was instituted at a rate of 3 tabs/d. The evolution was marked by incomplete neurological recovery with a muscle rating increased from 0 to 2 out of 5 after 30 days.

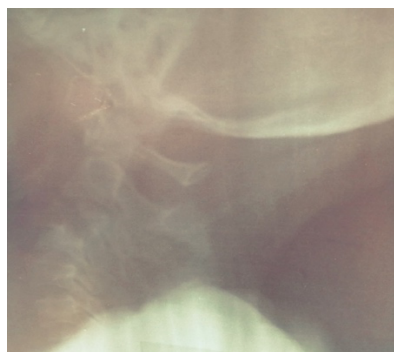


Fig. 1. X-ray of the cervical spine in profile view showing an image of significant osteolysis of the vertebral bodies of C3 and C4.



Fig. 2. CT of the cervical spine in sagittal section and bone window: showing an image of osteolysis of the vertebral body C3 and C4.



Fig. 3. CT of the cervical spine in sagittal section and parenchymal window: showing an image of osteolysis of the vertebral body C3 and C4.



Fig. 4. X-ray of the thoracic in AP view visualizing the presence of a heterogeneous rounded opacity.

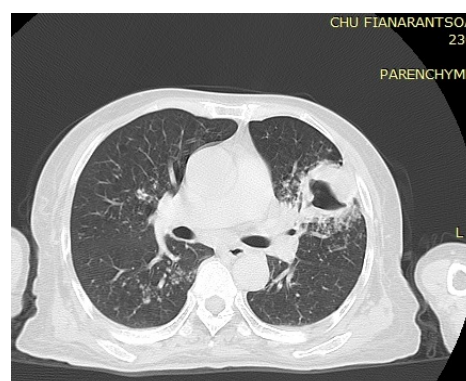


Fig. 5. Chest scan shows the presence of nodules and branching micronodules of infectious appearance on both lung fields.

### III. DISCUSSION

Despite the high frequency of bone and joint tuberculosis, particularly spinal tuberculosis, in developing countries, cervical Pott's disease remains rare at 4% of spinal tuberculosis cases [3]. At the cervical level, the medullary canal is narrower compared to the thoracic and lumbar level, hence the risk of neurological complications is greater [4]. The main neurological complication is tetraparesis and/or tetraplegia due to spinal cord compression. The evolution of a cervical Pott's disease is insidious, chronic and aspecific often leads to diagnostic wandering; which means that the majority of cases are diagnosed at a late stage where the bone and neurological lesions require medical and surgical management. Unfavorable socioeconomic conditions (precariousness, promiscuity, poor lifestyle) and HIV infection are all factors favoring tuberculosis infection [5]. Vertebral inoculation occurs by hematogenous route and the process extends to the intervertebral disc, or even to the adjacent vertebra. Paravertebral abscesses can develop from this involvement [6]. Even in a country like Madagascar where tuberculosis is endemic, the very non-specific symptomatology marked above all by chronic neck pain, whether or not associated with asthenia, anorexia, weight loss and chronic low-grade fever, the suspicion of tuberculous spondylodiscitis at the cervical level remains difficult. On the paraclinical level, CT and/or MRI allow a better definition of bone anomalies, soft tissues and vertebral displacements [7]. Confirmation of the diagnosis of tuberculosis is based on the detection of *M. tuberculosis* by direct examination, PCR or histology [8]. In the absence of confirmation, the diagnosis is

based on a range of clinical and/or paraclinical arguments. The treatment of spinal tuberculosis is based on multi-drug anti-tuberculosis chemotherapy, generally 12 months, with the possibility of extending this duration depending on the clinical condition of the patient [9]. Surgical treatment complements medical treatment by reducing dislocations and surgical stabilization using anterior cervical osteosynthesis [10]. The prognosis of this attack is generally favorable if appropriate treatment is instituted early.

#### IV. CONCLUSION

Upper cervical Pott's disease is rare. It exposes to serious neurological complications. The diagnosis is often late and is based on clinico-radiological arguments and confirmed by bacteriological examination but sometimes retained on elements of presumption. Treatment is based on anti-tuberculosis and immobilization of the cervical spine. The evolution under treatment is usually favorable.

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**M. Ndalana d'Assise** was born on November 18, 1990 in Ambodimanga I - Fenerive-Est, he is the first son of a family of one children. He began his medical studies in 2007 after having obtained the baccalaureate with honors.

Resident in Neurosurgery at the Faculty of medicine Antananarivo from 2018. Actually, in French, Brest hospital la cavale blanche departement Neurosurgery.