

# Tuberculose du rachis cervical

## Tuberculosis of the cervical spine

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### RÉSUMÉ

La tuberculose du rachis cervical représente une localisation rare dans le cadre des tuberculoses extra-pulmonaires.

Il s'agissait d'une femme âgée de 59 ans, sans antécédents pathologiques ni notion de contagio tuberculeux, hospitalisée pour une raideur douloureuse du rachis cervicale évolutive sur 9 semaines. L'examen neurologique était strictement normal.

A l'imagerie, la radiographie objectivait une lésion ostéolytique du corps de C3, avec infiltration des parties molles adjacentes. L'IRM montrait une fracture par compression du corps de C3 avec une anomalie de signal étendue à l'espace épidural antérieur et au tissu mou prévertébraux.

L'aspect était en faveur d'une origine néoplasique, notamment métastatique, le bilan d'extension était normal. La recherche de BK dans les crachats était négative. L'examen histologique d'une biopsie scanoguidée avait trouvé une inflammation granulomateuse géo-antocellulaire typique. Le diagnostic de tuberculose était retenu et un traitement antituberculeux était démarré avec immobilisation pendant 12 mois.

La patiente avait une récupération fonctionnelle totale au recul de 18 mois, avec reconstruction osseuse radiologique complète de C3 au bout de 12 mois.

### Mots-clés

Tuberculose, rachis cervical, fracture, traitement médical

### SUMMARY

Tuberculosis of the cervical spine is a rare extra-pulmonary localization. We reported the case of a 59-year-old woman with no medical history. She consulted for a 9 weeks history of painful cervical stiffness. Neurological examination was normal. Plain radiography revealed an osteolytic lesion of the C3 body, with infiltration of adjacent soft tissues. MRI showed a compression fracture of the C3 body with a signal anomaly extending to the anterior epidural space and pre-vertebral soft tissues.

First, tumoral extension assessment was done and was normal. BK's research into sputum was negative. Histological examination of a CT biopsy revealed typical granulomatous inflammation. The diagnosis of tuberculosis was retained and antituberculous treatment was started with immobilization for 12 months.

The patient had a total functional recovery at 18 months follow-up, with complete radiographic bone reconstruction of C3 after 12 months.

### Key-words

Tuberculosis; Cervical spine; Fracture; Medical treatment

## INTRODUCTION

The spinal column is involved in less than 1% of all cases of tuberculosis (TB) [1,2]. Spinal TB (Pott's disease) is a very dangerous type of skeletal TB as it can be associated with neurologic deficit due to compression of adjacent neural structures [3] and significant spinal deformity. Therefore, early diagnosis and management of spinal TB has special importance in preventing these serious complications. Although the development of more accurate imaging modalities and advanced surgical techniques, these are still very challenging topics.

We report herein the case of a woman who had cervical spinal TB, treated medically with good result.

## CASE REPORT

A 59-year-old woman presented to our emergency department with a 9-week history of worsening neck stiffness. She reported no recent history of trauma and denied previous TB exposure. Systemically, there was no loss of appetite, weight loss or sweats or fever. Her neck was stiff. Neurological examination revealed no focal motor weakness. Reflexes were present and symmetrical and sensation to light touch was normal. Base-line blood investigations were normal.

A chest radiograph demonstrated no anomaly. A lateral cervical spine radiograph demonstrated osteolytic lesion of the body of C3 with a retrolisthesis C2/C3 and soft tissue density in the pre-vertebral and retropharyngeal soft tissues (Figure 1). Sputum was sent for acid-fast bacilli (later noted to be negative).

An MRI of the cervical spine demonstrated altered signal intensity within the C2–C4 vertebral bodies with a fragmentation of the body of C3 with an extension to the pre-vertebral soft tissues and the anterior epidural space (Figure 2). There was no evidence of enhancement within the cord. The lesion resembled neoplasm metastasis. Thoracic CT scan revealed osteolytic lesion of the third and ninth left ribs. Abdominal and cervical ultrasonographies were normal.

A Ct scan guided biopsy of the spine lesion was done and the neuropathological examination of the biopsy showed typical granulomatous inflammation with characteristic infiltrate of lymphocytes, epithelioid macrophages and Langhans-type multi nucleated giant cells.

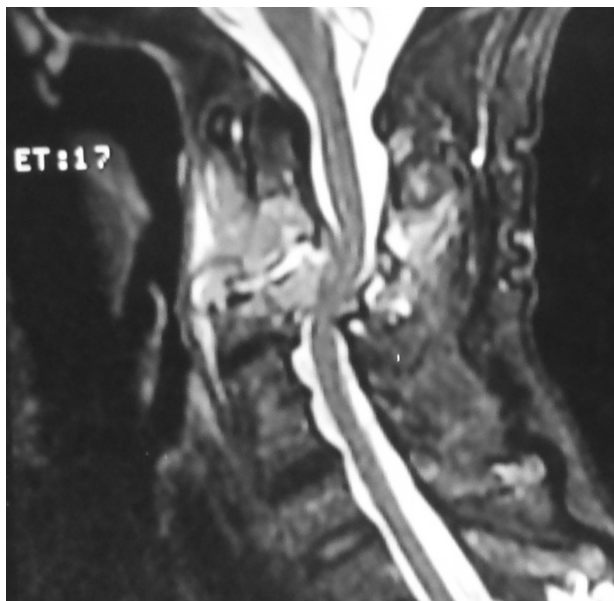
A diagnosis of tuberculosis was made and the patient initiated quadruple antitubercular therapy (Rifampicin

450 mg o.d., Isoniazid 300 mg o.d., pyrazinamide 1.5 g o.d. and ethambutol 600 mg o.d.) and the application of a minerva with front cover for 12 months since there were no neurological symptoms and that the spine deformity was minor.

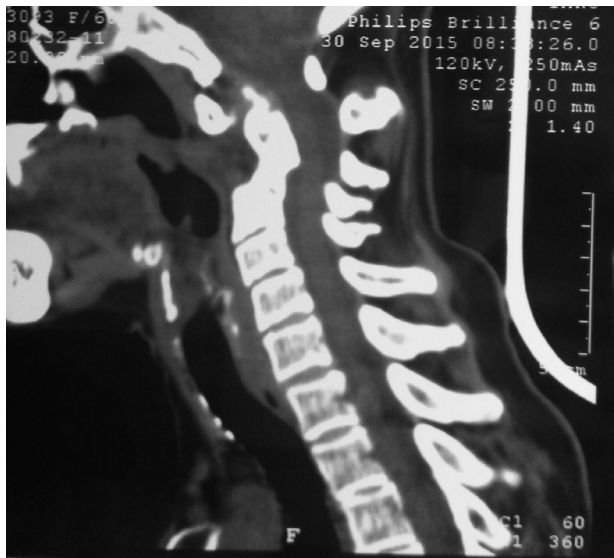
The patient made an uneventful recovery. Radiographic healing with formation of a callus was seen at six months. At 12 months complete fusion between the vertebral body of C3 and C4 was observed despite a residual C1–C2 instability (fig3). The patient returned to active social life within 3 months of having initiated treatment and completed the full 12 month course of antituberculosis drugs.



**Figure 1:** Lateral X-ray of the cervical spine



**Figure 2:** MRI of the cervical spine showing vertebral collapse of C3 with an epidural involvement



**Figure 3:** Follow-up CT scan showing complete ossification of the C3 body.

## DISCUSSION

Cervical spinal tuberculosis is an uncommon pathology, which therefore is very difficult to recognize. Typical TB lesions resembles malignant deposits in the spine, which are more frequent [4,5].

Our case is an excellent example of wrong interpretation of TB as primary or metastatic neoplastic disease.

Tuberculosis of the vertebral column has been documented for over 5000 years; evidence of the disease has been observed in mummies from Ancient Egypt [6]. The London surgeon Sir Perceival Pott was the first to report this extra-pulmonary manifestation of tuberculosis (TB) in association with paraplegia and kyphotic deformity of the spine [7]. The most common extrapulmonary skeletal manifestation of TB is within the spine, with a predilection to the thoracic and lumbar regions of the vertebral column. In 2–3% of cases, the cervical spine may be affected with resultant lesions giving rise to instability and neurological deficits.[8.9]

The thoracic or lumbar spine are usually involved. There are few reports in the literature describing TB of the cervical spine [10.11]. The duration between onset of symptoms and presentation is 11–15 months. The patients are typically young with a mean age of 38 years (range 29–52). The delay in presentation is secondary to the low intensity of the initial symptoms and incorrect attribution to musculoskeletal pain. In the largest case series (n = 61), constitutional symptoms such as fever, malaise and weight loss did not contribute to the diagnosis in a single patient. Neurological deficits are the most serious complication of spinal TB with patients presenting with para- or tetraplegia, hemiplegia or monoplegia [12]. When the cervical spine is involved the commonest presenting symptom is neck pain and can precede the diagnosis by 24 months [10]. Over 50% of patients will have muscular weakness [10]. The development of kyphosis, secondary to spinal TB, is the rule rather than the exception. In severe cases kyphosis can be as great as 60 degrees [12]. Our patient presented with moderate cervical kyphosis (Figure 2).

In case of a neurological deficit, the gold standard treatment, following decompression, is anterior spinal instrumentation to support the collapsed anterior weight-bearing column of the cervical spine [11.12.13].

In the absence of gross deformity or neurological deficit, TB of the spine is a medical disease and should be treated with antituberculosis medication, rest and mobilization with suitable orthosis [12].

The efficacy of antituberculosis drugs and other conservative means have been shown in several studies for the treatment of spinal TB in the absence of neurologic deficit, instability, and deformity regardless of presence of paravertebral abscess [14.15.16]. Adequate

early pharmacological treatment can prevent severe complications [15]. Combination of rifampicin, isoniazid, ethambutol, and pyrazinamide for two months followed by combination of rifampicin and isoniazid for a total period of 6, 9, 12 or 18 months is the most frequent protocol used for treatment of spinal TB [12].

Our patient underwent a medical therapy since there was no neurological deficit and the deformity was minor.

The best treatment for TB of the cervical spine with paraplegia is to prevent it [12]. This can only be achieved by approaching patients with worsening neck pain with caution and spotting TB early before it represents with concomitant neurological deficits.

### CONCLUSION

The prognosis for spinal tuberculosis is improved by early diagnosis and rapid intervention. A high degree of clinical suspicion is required if patients present with chronic neck pain, even in the absence of neurological symptoms and signs. Medical treatment is generally effective.

Surgical intervention is necessary in advanced cases with marked bony involvement, abscess formation, or paraplegia.

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