AANHS Journal
Journal homepage: http://aanhsj.usu.ac.id
AANHS Asian Australasian Neuro & Health Science Journal
Universitas Sumatera Utara - Indonesia

Cervical Tuberculosis Spondylitis: A Very Rare Case Report

Gatot Aji Prihartomo*[1], Ade Wirdayanto[1], Muhammad 'Azmi Hakim[2]
[1]Department of Neurosurgery, Arifin Achmad General Hospital. Pekanbaru Riau, Indonesia
[2]General Practitioner, Arifin Achmad General Hospital. Pekanbaru Riau, Indonesia
*Corresponding Author: drajins@gmail.com

ARTICLE INFO

Article history:
Received : Nov, 2nd 2023
Revised : Nov, 9th 2023
Accepted : Dec, 13rd 2023
Available : Dec, 20th 2023

E-ISSN: 2686-0848

How to cite:
Prihartono GA, Wirdayanto A, Hakim MA. Cervical Tuber culosis : A Very Rare Case Report. Asian Australian Neuro and Health Science Journal, 2023 Dec 05(03); 89-92

DOI: 10.32734/aanhsj.v5i03.14271

ABSTRACT

Introduction: Cervical tuberculous spondylitis is a rare disease and low prevalence in all spinal diseases. Cervical region is more vurnerable for volume addition because of tight space in spinal canal that could damage neurological function.

Case Report: A 25 years old female with pain in posterior of her neck. The pain was accompanied by numbness and tingling that radiating from hind-neck to left hand. She had no systemic symptoms. She also had small-sized lump in hind-neck. The patient admitted that she was undergoing antituberculosis drugs regiment three months before. The neurological and physical examination revealed hypesthesia in left upper limb, and gibbus in hind-neck which sized approximately one centimeter in diameter. MRI examination revealed that suspicion of cervical tuberculous spondylitis. The patient had been undergone debridement laminectomy and posterior stabilization surgery. The pathology impression revealed that supporting tuberculous chronic specific spondylitis.

Discussion: The disease is known by granulomatous inflammation reaction consisting of infiltrates of lymphocytes and epithelial cells, which combine to form giant Langhans cells and ultimately lead to necrosis of involved tissues forming cold abscess [1]. Seventy percent of patients with tuberculous spondylitis came with cold abscess [1]. This is chronic abscess with no signs of inflammation. This abscess moves inferior of ligament or along longitudinal axis; and is present in many places

Conclusion: Cervical tuberculous spondylitis is a very rare case, because it used to be in lumbar or thoracic vertebrae. If this case had left untreated, it would have severe prognosis.

Keyword: Cervical tuberculous spondylitis; debridement laminectomy; posterior stabilization

1. Introduction

Whereas tuberculous spondylitis accounts for approximately 1% of all tuberculosis, cervical tuberculous spondylitis accounts for 3–5% of all spinal diseases [1]. The smaller size of the spinal canal, near to the vertebral artery and other important organs, the unique surface structure of facet, more mobility, and lordotic alignment make cervical spine is more susceptible to neurological damage, instability, and deteriorating misalignment [1].

Although mortality after tuberculous spondylitis has decreased from 10% to 3% due to effective antituberculous drugs, high rates of deformities and paraparesis (approximately 15–30%) remain a big problem [1]. The pathophysiology of cervical tuberculous spondylitis is secondary to hematogenic (arterial/venous branches) or lymphatic spreading from infected sites such as the lungs, mesenteric, genitourinary, gastrointestinal or lymphadenopathy [1]. Here, we report a very rare case of 25-year-old female who was admitted to the hospital due to cervical spine tuberculosis.

2. Case Report

A 25 years old female with chief complaint was pain in posterior of her neck six months before. The pain was accompanied by numbness and tingling that radiating from hind-neck to left hand. She had no complaint with lower limbs. She had no pulmonic or systemic symptoms such as chronic cough, fever, nocturnal sweating, or decreased of body weight. She also had small-sized lump in hind-neck. The patient admitted that she was undergoing antituberculosis drugs regiment three months before. The neurological and physical examination revealed that normal motor function in four extremities, hypesthesia in left upper limb, and gibbus in hind-neck which sized approximately one centimeter in diameter with no sign of inflammation. MRI examination revealed that suspicion of cervical tuberculous spondylitis due to intraosseus abscess at C6,

epidural abscess and spinal canal posterior at C5-6 level causing spinal canal stenosis with compression of the spinal cord (Figure 1). She was told that she would undergo an operative management.

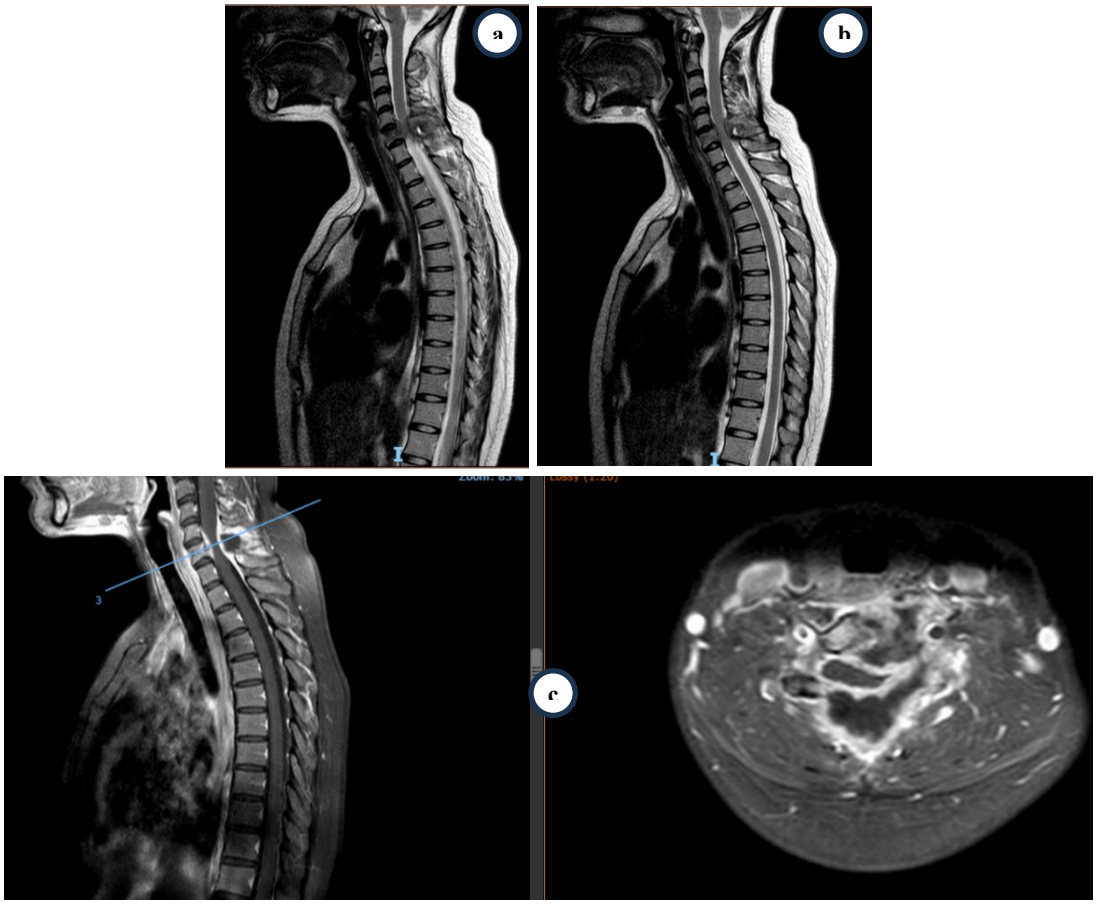

Figure 1. MRI cervicothoracal imaging; a and b. T2-weighted sagittal in different slices; c. T1-weighted axial and sagittal with gadolinium at the level of C6. Note that spinal cord (red arrow) was compressed by epidural and spinal canal posterior abscess

The patient had been undergone debridement laminectomy and posterior stabilization surgery. The patient was proned with generally anesthetized. The incision line was in the midline at C3 to T1. The lamina of C6 and partial part of C5 were lytic with tuberculous infected tissue (Figure 2). Then lateral mass screws and rods were implanted at C4-5 and C7 (Figure 3). Laminectomy was done at C5-6 level. Bleeding control was done and the operative site was sutured layer by layer and neck was supported by neck collar. The tumour tissue was examined by the pathologist and the impression result was spreading of lymphocytes, histiocyte, plasma cell, Datia Langhans cells, and macrophages with necrotic area, supporting tuberculous chronic specific spondylitis. Five weeks after the operation, patient's sensory examination was resolved from radiating pain from hind-neck, tingling and numbness sensation.

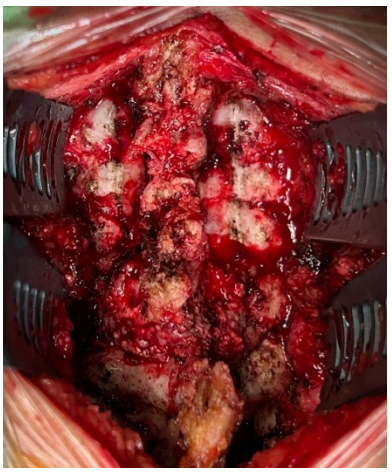

Figure 2. Note that lamina of C6 and partial part of C5 were lytic due to tuberculous infection

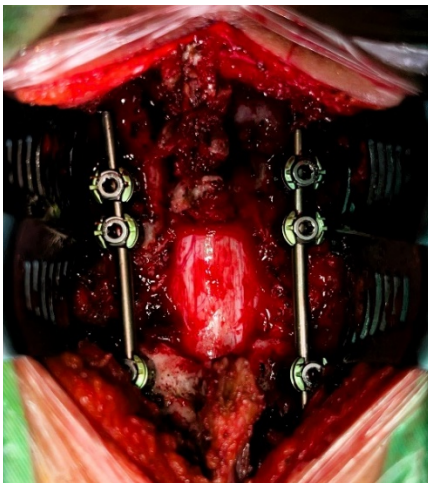

Figure 3. Laminectomy was done and lateral mass screws and rods were implanted

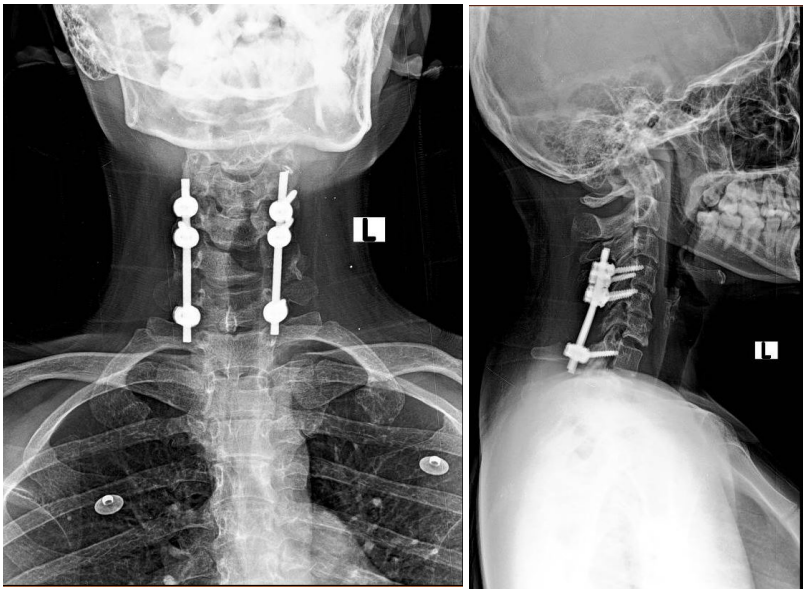

Figure 4. Post operation cervical AP-Lateral plain radiograph

3. Discussion

The disease is known by granulomatous inflammation reaction consisting of infiltrates of lymphocytes and epithelial cells, which combine to form giant Langhans cells and ultimately lead to necrosis of involved tissues forming cold abscess [1]. Seventy percent of patients with tuberculous spondylitis came with cold abscess [1]. This is chronic abscess with no signs of inflammation. This abscess moves inferior of ligament or along longitudinal axis; and is present in many places [1].

Likewise, progressive bone destruction due to progression makes to instability and deformity [1]. The four most major clinical manifestations of tuberculous spondylitis involve pain (axial or radicular), systemic symptoms, neurological deficits, and deformities [1]. Cervical pain (87%), radicular pain and limited neck flexibility (94%) are the most common symptoms of cervical tuberculous spondylitis [1]. Potential causes of neurological deficits during acute phase involve a. mechanical compression due to extradural abscess, granulation tissue, pathologic fractures, displaced fragments, or spinal instability, b. primary spinal cord injury/edema, c. Arteritis or thrombosis of vasculature or ischemia [1].

The gold standard in diagnosing tuberculous spondylitis is MRI, with sensitivity is 93% and specificity is 96% [1]. Features of MRI findings in tuberculous spondylitis are smooth, thin-walled abscesses with homogenous contrast enhancement, large paravertebral/intravertebral abscesses, quite preserved or late disc progression, multiple level of vertebral disease, and subligamentous abscess extension [1]. As the abscess spreads, it follows the path of least resistance and forms necrotic debris. The sinuses in the skin suddenly appear, discharge and heal abruptly. The bone's response to infection can range from no reaction to a severe reaction. In the spinal

bone, the infection effects the discus intervertebralis and spreads to the anterior and posterior longitudinal ligaments. Infection of epidural infection leads to permanent nerve damage. [2].

Systemic manifestations gradually emerge in the early phases including fever, malaise, night sweating, lethargy, and weight loss. If pain occurs continuously, the symptoms will appear later and leading to paralysis and bone fractures [2]. Cervical complications can cause hoarseness due to difficulty swallowing, nerve paralysis of recurrent laryngeal nerve, and stridor. This symptom may be the result of anterior abscess formation. Neurological symptoms often appear late. Rectal and motoric function are good prognostic tools [2]. Cervical tuberculous spondylitis is thought to be a dangerous disease due to its ability to cause compression of spinal cord and quadriplegia. This encourages the importance of diagnosis in early phase for the therapy of cervical tuberculous spondylitis [3].

In this case, the patient had no systemic symptoms such as fever, malaise, cough, night sweating, or weight loss that resembled symptoms of classic tuberculousis, instead the chief complaint was pain in posterior of the neck and accompanied by radiating numbness and tingling sensation to the left hand. The MRI examination revealed that cervical tuberculous spondylitis which was a vary rare case to be found.

4. Conclussion

Cervical tuberculous spondylitis is a very rare case, because it used to be in lumbar or thoracic vertebrae. If this case had left untreated, it would have severe prognosis. In this case, debridemment laminectomy and posterior stabilization had been done. The result was improvement of posterior of the neck and tingling that radiated to left hand.

Acknowledgements

None.

Conflict of Interest

The author declare no conflicts of interest in preparing this article

References

[1] Shetty AP, Viswanathan VK, Rajasekaran S, Cervical spine TB – Current concepts in management. *Journal of Orthopaedic Surgery*, vol. 29, no. 1_suppl, 2021, doi: 10.1177/23094990211006936.

[2] Ermawan R, Jiwandono BS, Nasution AM, Prijosedjati RA, Utomo P. Cervicothoracic spinal tuberculosis treated with a combined single stage surgery.

[3] Yin XH, He BR, Liu ZK, Hao DJ. The clinical outcomes and surgical strategy for cervical spine tuberculosis. *Medicine (United States)*, vol. 97, no. 27, Jul. 2018, doi: 10.1097/MD.0000000000011401