

# Extension of paravertebral abscess in tuberculosis of the thoracic spine: report of two cases

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## Summary

Two cases of tuberculosis of the thoracic spine with extrapleural extension of paravertebral abscesses, presenting radiologically as cold abscesses away from the spine in the PA chest radiograph, are presented. The radiographic features and response to antitubercular drugs are discussed.

*Key words:* Tuberculosis of spine, thoracic paravertebral abscess, extrapleural extension.

## Introduction

Paravertebral abscess formation is common in tuberculosis of the spine. Thoracic paravertebral abscess can track for a considerable distance well clear of the spine and spinal ligaments and present as clinically palpable or radiologically visible cold abscess. However such an extension of the thoracic paravertebral abscess is not common. Two such cases are presented in this paper. The purpose of this paper is to draw attention to this condition and to discuss the radiographic features and response to antitubercular therapy.

## Case Report No. 1

A 17 year old Malay boy was admitted in April 1989 with a one month history of lethargy, tightness of the chest and a midline swelling over the back of the chest. Clinical examination revealed diminished air entry and dullness on the left side of the chest. He had gibbus deformity of the thoracic spine. No neurological deficit was detected. ESR was 135 mm/1st hour. AP and lateral radiographs of the thoracic spine showed erosion of the adjacent vertebral bodies of T7 and T8, destruction of the disc and bilateral paravertebral abscess. All the above features were consistent with Pott's disease.

AP radiograph of the chest revealed a well-defined opacity in the left mid and lower zones. (Fig. 1). The lateral radiograph showed the opacity bulging forward from the posterior chest wall. Ultrasound examination demonstrated a large, well-defined space occupying lesion with homogenous low level internal echoes. Computed tomography of the chest showed a large mass of low density situated posteriorly in the left hemithorax and to the left of the spine. Some speckled calcifications were seen in the posterior aspect of the mass. The mass was diagnosed as a cold abscess due to extrapleural extension of the paravertebral abscess. Diagnostic needle aspiration produced blood stained whitish material which was thought to be liquefied caseating material.

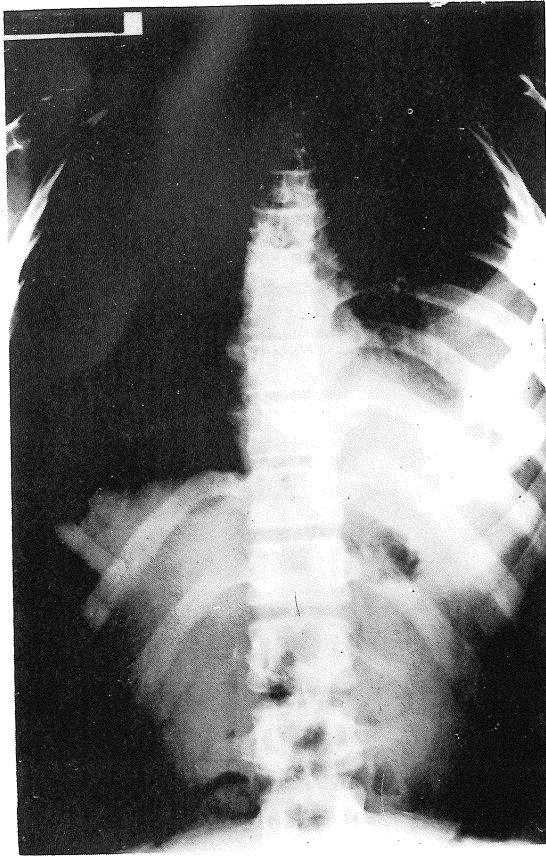


Fig. 1

Case 1 – AP radiograph of the chest. Lateral extension of cold abscess presenting as a large well-defined opacity in the left mid and lower zones.

The patient was started on antitubercular drugs. PA chest radiograph done after three months showed that the cold abscess had completely resolved. (Fig. 2). When he was last seen in November 1989, he was well, his appetite had improved and his weight had increased from 45 kg in April to 52 kg.

### Case Report No. 2

A 56 year old Malay man developed progressive weakness of his lower limbs while he was performing the Haj in Mecca. He was seen at a hospital in Saudi Arabia where he had radiographs including computed tomography and myelography. A diagnosis of vertebral abscess was made and he was treated with antibiotics. On his return to Malaysia he was referred by the medical officer, Health Centre, Subang International Airport to the General Hospital, Kota Bharu in July 1989. On examination he was found to have paraplegia and pressure sores over the sacral area. ESR was 141 mm/1st hour.

AP and lateral radiographs of his thoracic spine revealed erosion of the opposing surfaces of the bodies of T8 and T9 with narrowing of the disc space and bilateral paravertebral abscess. The appearances were consistent with Pott's disease.

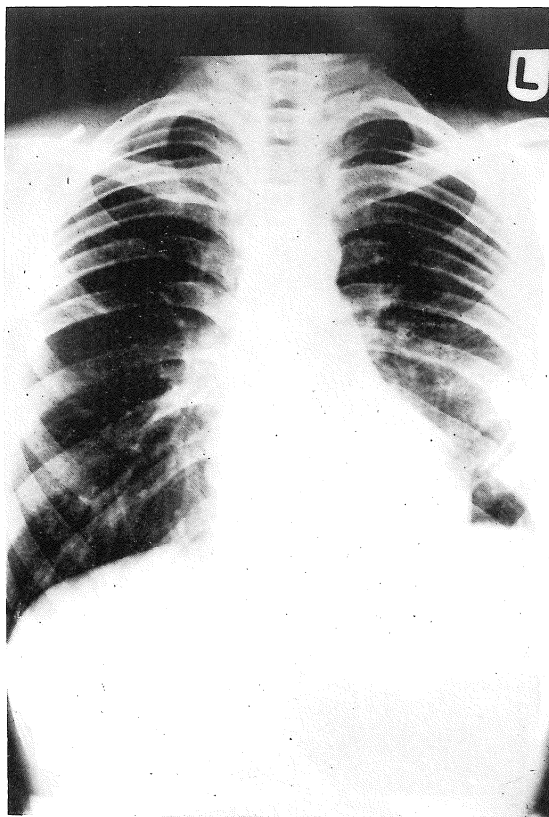


Fig. 2

Case 1 – The cold abscess has resolved after three months of antitubercular chemotherapy.

PA Radiograph of the chest showed a well-defined opacity based against the left mediastinal margin (Fig. 3). This was diagnosed as a cold abscess due to extrapleural extension of the paravertebral abscess.

The patient was started on antitubercular chemotherapy. PA chest radiograph repeated three months later showed that the cold abscess had resolved completely (Fig. 4).

When he was seen in February 1990, he was feeling better, his appetite was good and the bed sore was healing. The ESR was 23 mm/1st hour. However his lower limbs were still spastic with hyperreflexia. At this stage he was advised to see the Orthopaedic Surgeon at Hospital Universiti Sains Malaysia, Kubang Kerian, for possible surgical intervention.

### Discussion

Extension of tuberculosis from vertebral and discal sites to the ligaments and soft tissues is frequent.<sup>1</sup> Paravertebral abscesses occur at all levels and may be on one side only, on both sides symmetrically or asymmetrically, or may occur only in front of the spine.<sup>2</sup> The paravertebral abscess may remain localised or extend for a considerable distance.

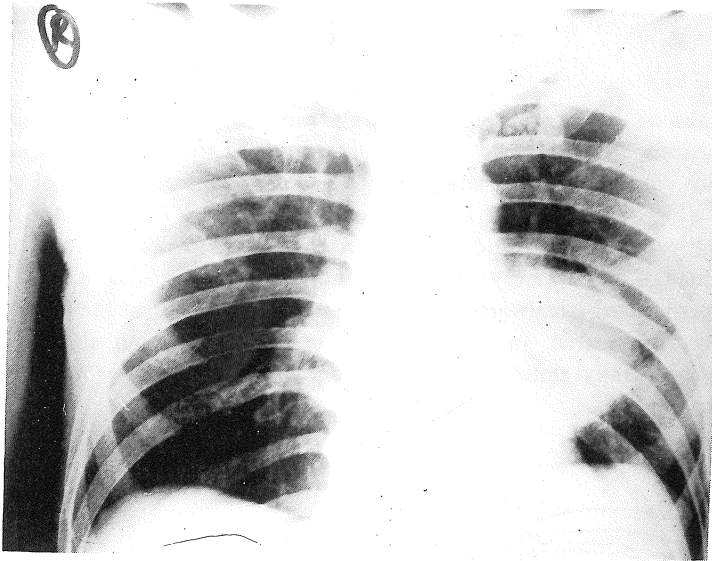


Fig. 3

Case 2 – AP radiograph of the chest showing the cold abscess as a well defined hemispherical opacity based against the left mediastinal margin.

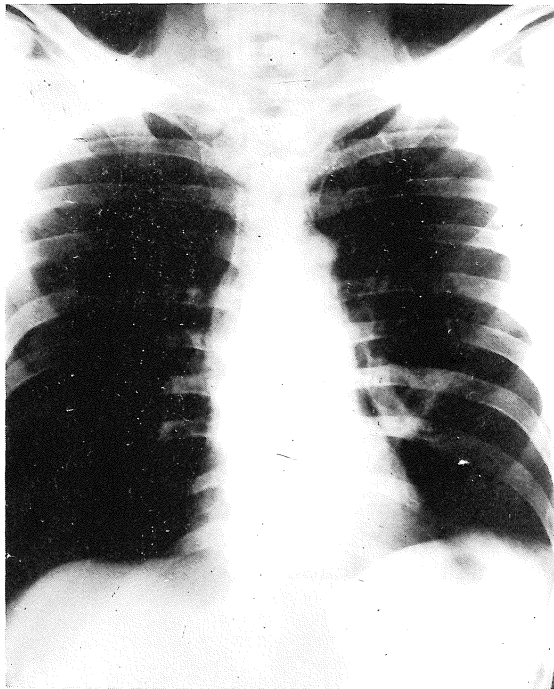


Fig. 4

Case 2 – The cold abscess has resolved after three months antitubercular chemotherapy.

Thoracic paravertebral abscess can present itself far away from the vertebral column along fascial plain or course of neurovascular bundles.<sup>3</sup> It may present along the intercostal space on the chest wall as a clinically palpable mass or may present as an extrapleural mass away from the spine radiographically (Fig. 5).<sup>4</sup> In the two cases presented the orthopaedic lesions lay immediately outside the parietal pleura and the paravertebral abscesses extended extrapleurally presenting as well-defined shadows away from the thoracic spine in the PA or AP chest radiographs. Cold abscesses may be reabsorbed in large part if the infection at the musculoskeletal site of origin is successfully treated. In the two cases presented the cold abscesses resolved spontaneously with chemotherapy alone. Palpable or peripheral cold abscesses may be aspirated with instillation of streptomycin.<sup>5</sup>

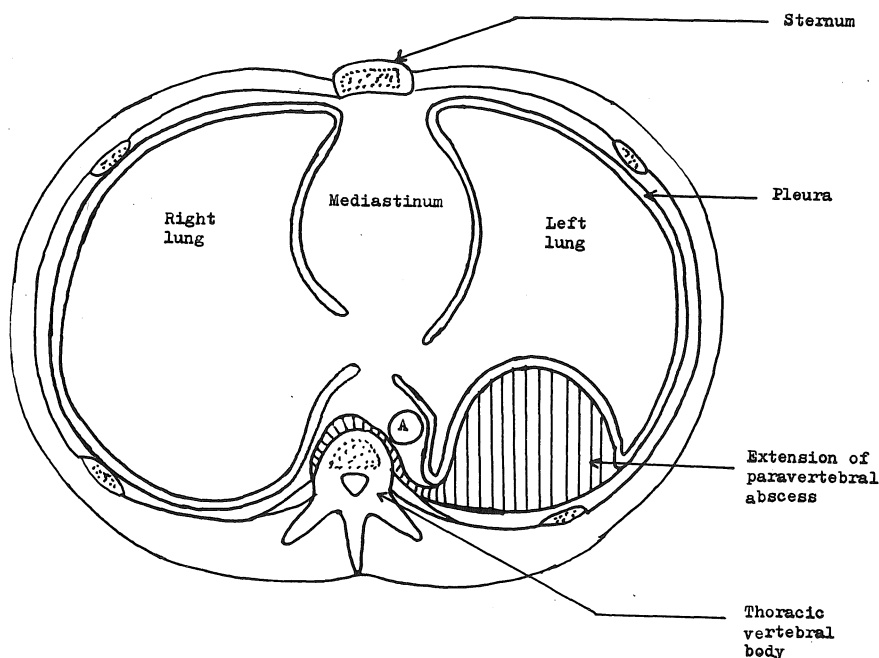


Fig. 5

Transverse section through the chest to show an extra-pleural lateral examination of a paravertebral abscess. The extra-pleural extension of the abscess is shown pushing the pleura and lung forwards. The paravertebral abscess and its extension are shown shaded. (A — Thoracic Aorta).

In conclusion, thoracic paravertebral abscess in tuberculosis of the thoracic spine can spread extrapleurally and present as a cold abscess some distance away from the thoracic spine in the PA or AP chest radiograph. Such a cold abscess may resolve without any intervention when the primary infection at the musculoskeletal site is controlled with antitubercular therapy.

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