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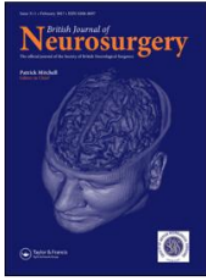
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Paralytic ileus in the patient with tuberculosis of spine

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ABSTRACT

Background: We reported a patient with spinal tuberculosis and paralytic ileus. A 56-year-old Javanese male presented with lower limb paralysis and bowel obstruction 2 weeks prior to admission. He was found to have hypoalbuminemia and hypesthesia from the T7/T9 levels and below. Other than increased alanine aminotransferase, hematology and blood chemical tests were normal. MRI and plain abdominal radiographs confirmed the diagnosis of spinal tuberculosis at the T5/6 level and paralytic ileus. Tubercles in the lymphoid tissue of the intestinal submucosa were not seen.

Conclusion: Paralytic ileus may occur in spinal TB.

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Pott's disease; paraplegia;
intestinal obstruction;
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Introduction

Dorsal spinal TB is typically associated with neurological complications due to the narrow canal and thoracic kyphosis.^{1,2} Destruction of the intervertebral disk space and vertebral bodies often leads to anterior wedging, kyphosis and gibbus formation.^{3,4} Paraplegia and autonomic nervous system impairment may occur.^{5,6} Here we report a case of spinal tuberculosis accompanied by paralytic ileus and hypoalbuminemia, which were improved gradually after initial treatment.

Case report

A 56-year-old Javanese male was admitted complaining of weakness of both legs for 2 weeks. He complained of fatigue decreased sensitivity from approximately below the rib cage. He had difficulties with micturition and defecation and mild dull abdominal pain for 9 days. He denied any fever or chronic cough history and was previously well. There were no affected family or neighbours. Vital signs were normal. The abdomen was distended and tympanic. His body mass index was 24.2. Neurological examination revealed paraplegia and hypesthesia from the T7/T9 levels and below. Reflexes were within normal limits.

Hematological and blood chemical examinations other than high ALT and low albumin levels, were within normal limits (ALT 131 U/L, albumin 2.88 g/dL). A paralytic ileus appearance was seen on abdominal x-rays (Figure 1). A Chest x-ray was clear. Spinal MRI showed destructions of the right T5 and both T6 pedicles. There was a paravertebral abscess at T5/6 compressing the spinal cord and forming a *curtain sign* appearance causing edema at these levels. Abdominal MRI did not show evidence of TB of the gastrointestinal tract or lymphadenopathy (Figure 2).

An NG tube was inserted. The patient was treated for hypoalbuminemia and ileus with intravenous aminofusin and 5% dextrose in water solutions, ranitidine and vitamins B1, B6 and B12. Anti TB chemotherapy was commenced 500 mg of isoniazid,



Figure 1. A plain abdominal x-ray of the patient showed coiled spring and bowel dilatation mixed with prominent fecal material with distribution until pelvic cavity.

450 mg of rifampicin, 1000 mg of ethambutol, 1500 mg pyrazinamide daily. Within 9 days, abdominal fullness improved and general condition improved. Further treatment and investigation were halted due to the patient's wishes.



Figure 2. A sagittal view of cervicothoracic MRI with contrast of the patient showed destruction of the fifth and sixth thoracic vertebral bodies and a compression of the spinal cord by an abscess at the concomitant levels.

Discussion

Our patient suffered from spinal TB was suspected of having abdominal TB as well. We found no electrolyte disturbances that often accompany paralytic ileus. Several medications have been associated with paralytic ileus, including anticholinergics, opiates, calcium channel blockers, clonidine, and psychotropic but our patient was taking no such medications.^{7,8}

The abdominal imaging did not show the cause of the ileus. It can be caused by bowel obstruction from TB but we found no evidence of that.

Autonomic nervous system impairment due to the spondylitis tuberculosis could cause a sympathetic and parasympathetic out-flow disturbance to the gastrointestinal tract; this would disrupt the peristalsis and cause adynamic ileus.^{9,10}

Instead of mechanical obstruction, pseudo-obstruction due to neuropathy was the likely mechanism in this case. Inflammation affecting the lateral horn of the spinal cord may cause over-activity of the sympathetics.^{9–11} The autonomic imbalance lead to impaired peristalsis.^{11–13} In addition; the enteric nervous system may also be compromised, thus contributing to the pathophysiology.^{12,13}

Adynamic ileus has been reported previously in spinal cord injury due to causes other than tuberculosis i.e. thoracolumbar compression fractures of T8, T12 and L4;¹⁴ post-lumbar spinal surgery due to the severe lumbar spinal stenosis of L1–L2 to L4–L5, an unstable degenerative spondylolisthesis at L4–L5 and a

ruptured L4–L5 disc;¹⁵ and herpes zoster infection at L4 level.¹⁶ In these patients, specific causes of bowel mechanical obstruction were not found. The signs and symptoms of nausea, vomiting, abdominal discomfort, constipation and/or diarrhea with bowel dilatation showed in the abdominal x-rays were reported.^{14–16}

Conclusion

Paralytic ileus in a patient with spinal tuberculosis could be due to the mechanical or neurological complications.

Disclosure statement

No potential conflict of interest was reported by the authors.

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