

## Images in Clinical Tropical Medicine

### Extrapulmonary Tuberculosis Presenting With Double Vision in a Resource-Limited Tropical Setting

Anna Blum,<sup>1,2\*</sup> Junior Mudji,<sup>1</sup> and Johannes Blum<sup>1,2,3</sup>

<sup>1</sup>Hôpital Evangélique de Vanga, Bandundu, Democratic Republic of Congo; <sup>2</sup>Swiss Tropical and Public Health Institute, Basel, Switzerland; <sup>3</sup>Medical Faculty, University of Basel, Basel, Switzerland

A 16-year-old boy was admitted to a rural hospital in the Democratic Republic of Congo with a 1-month history of abdominal pain, headache, and nightly fevers, and a 1-week history of seizures. Physical examination included general weakness, low-grade fever (37.5°C), neck rigidity, and bilateral abducens palsy leading to double vision (Figure 1A and B), typical clinical findings consistent with tuberculous basal meningitis.<sup>1</sup> The latter was supported by lumbar puncture showing white blood cells of 720 cells/mm<sup>3</sup> (90% mononuclear) and elevated protein (Pandy test positive) but negative Ziehl-Neelsen stain. In 20% of meningeal tuberculosis cases, the cerebrospinal fluid cell count is between 500 and 1,500/mm<sup>3</sup>, and in 65% between 100 and 500/mm<sup>3</sup>.<sup>1</sup>

In addition, physical examination revealed spinal tenderness at T 10-11 with normal reflexes, sensation, and strength of lower extremities bilaterally. Abdominal and cardiopulmonary examination was unremarkable. Spinal X-ray showed destructive anterior spondylodiscitis at T 10-11 with a paravertebral abscess (Figure 1C), again typical findings for Pott's disease<sup>2</sup> and

explaining the abdominal pain. Simultaneous pulmonary tuberculosis or human immunodeficiency virus (HIV) infection were ruled out by chest X-ray and a HIV rapid test.

Due to pulmonary tuberculosis already experienced as an infant and current extrapulmonary manifestation, an extended treatment scheme with rifampicin, isoniazid, ethambutol, pyrazinamide, and streptomycin (2SRHZE/RHZE/9RH), as well as initially beginning with corticosteroids (prednisone 1 mg/kg) was chosen.

Within 2 weeks, the abducens palsy was resolved completely, the abdominal pain improved, and the spinal fluid cell count dropped to 23 cells/mm<sup>3</sup>. One month later, the patient was back to normal daily life, playing football with friends.

Tuberculosis is still endemic in many low- and middle-income countries such as the Democratic Republic of Congo with a tuberculosis incidence of 323 cases per year per 100,000 inhabitants and a high number of undetected cases every year.<sup>3</sup>

This case illustrates that a good clinical examination, knowledge on the epidemiological background, and basic

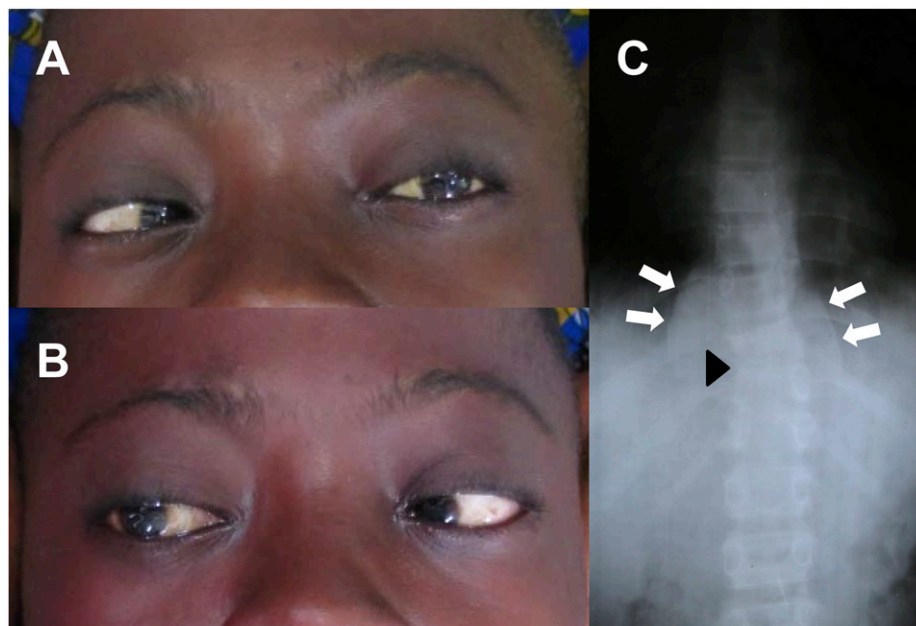


FIGURE 1. (A and B) bilateral abducens palsy as a sign for tuberculous basal meningitis and (C) anterior spondylodiscitis at T 10-11 with a paravertebral abscess (Pott's disease). This figure appears in color at [www.ajtmh.org](http://www.ajtmh.org).

\* Address correspondence to Anna Blum, Swiss Tropical and Public Health Institute, Socinstrasse 57, Basel 4051, Switzerland. E-mail: [blumanna@gmail.com](mailto:blumanna@gmail.com)

laboratory technology may allow diagnosis and successful treatment even without modern technologies such as polymerase chain reaction and magnetic resonance imaging/computed tomography scan in resource-limited settings.

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Authors' addresses: Anna Blum, Medical Services, Hopital Evangelique de Vanga, Bandundu, Democratic Republic of Congo, Medical Services, Schweizerisches Tropen- und Public Health-Institut, Basel, Switzerland, and Praxis Dr. B. Beck, Tropen- und Reisemedizin am Bellevue, Zürich, Switzerland, E-mail: blumanna@gmail.com. Junior Mudji, Medical Services, Hôpital Evangélique de Vanga, Bandundu, Democratic Republic of Congo, E-mail: mudjijunior@gmail.com. Johannes Blum, Medical Services, Hopital Evangelique de Vanga, Bandundu, Democratic Republic of Congo, Medical Services,

Schweizerisches Tropen- und Public Health-Institut, Basel, Switzerland, and Medical Faculty, University of Basel, Basel, Switzerland, E-mail: johannes.blum@swisstph.ch.

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## REFERENCES

1. Leonard JM, 2017. Central nervous system tuberculosis. *Microbiol Spectr* 5: 4.
2. Rivas-Garcia A et al., 2013. Imaging findings of Pott's disease. *Eur Spine J* 22 (Suppl 4): 567–578.
3. World Health Organization, 2017. *WHO Tuberculosis Report 2017*. Geneva, Switzerland: WHO, 21–39.