CASE REPORT

Nocardia pneumonia in an HIV-infected neonate presenting as acute necrotising pneumoniaPierre Goussard,¹ Robert Gie,¹ Helena Rabie,¹ Savvas Andronikou²¹Department of Paediatrics and Child Health, Stellenbosch University, Tygerberg Children's Hospital, Cape Town, South Africa²Department of Radiology, University of Witwatersrand, Johannesburg, South Africa

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SUMMARY

We describe an expansile necrotising pneumonia caused by *Nocardia* in a HIV-infected 3-week-old baby. The radiological images and treatment of *Nocardia* in immune deficient children are discussed.

DESCRIPTION

A 3-week-old baby presented with cough, fever and respiratory distress. The chest radiograph (figure 1A) demonstrated confluent air-space disease in the right middle and lower lobes with shift of the mediastinum to the left. An intercostal drain was inserted, but no fluid was drained. The radiograph was subsequently interpreted as representing an expansile pneumonia. The baby needed intubation and ventilation. A CT of the chest (figure 2) showed confluent, non-enhancing soft tissue density with outwardly convex borders expanding the right middle and lower lobes and central cavitation. The lack of visible enhancing vessels, air-filled bronchi or any normal lung architecture was in keeping with necrotising pneumonia. Progressive breakdown of the lung developed into a large air-filled cavity with persisting mediastinal shift (figure 1B). The baby was confirmed to be HIV PCR positive, with a CD4 count of 727 u/L (36%). *Nocardia otitidiscaviarum*, sensitive to trimethoprim-sulfamethoxazole, was cultured from blood. No other organism was cultured. Infections with *Nocardia* are almost exclusively seen in immunocompromised patients.¹ *Nocardia* species can cause pulmonary, cutaneous,

Figure 2 Axial postcontrast CT scan (mediastinal window) demonstrates features of a necrotising pneumonia including soft tissue density occupying the right middle and lower lobes without any visible vessels or bronchi and with central areas of cavitation. The heart is displaced to the left. An intercostal drain is visible on the right.

ocular and disseminated disease.^{2,3} The diagnosis of nocardiosis is challenging as the organism is difficult to culture due to the bacteria's slow growth. The treatment of choice is trimethoprim/sulfamethoxazole, imipenem, amikacin and linezolid. Reported mortality is 25% with the highest occurring in pulmonary involvement.¹

Figure 1 (A) Initial chest radiography demonstrates the confluent soft tissue density expanding the right middle and lower lobes and displacing the mediastinum to the left, in keeping with an expansile pneumonia. (B) Follow-up radiograph demonstrates that the patient was intubated. An expansile air-filled cyst resulted from the necrotising pneumonia replacing the right middle and lower lobes with persistent mediastinal shift to the left.

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Learning points

- ▶ *Nocardia* pneumonia may be a cause of pneumonia in HIV-infected neonate.
- ▶ *Nocardia* pneumonia may present as an acute necrotising pneumonia.
- ▶ *Nocardia* is an unusual cause of expansile and necrotising pneumonia.

Contributors PG was responsible for the diagnoses and management of the patient. PG and RG were responsible for writing the paper. RG played a major role in the management; and was present during different time periods of the child's management and was the leading decision-maker. RG and PG were responsible for

writing the paper, HR was the leading doctor for the infectious disease team and responsible for the antibiotic choice and ARV treatment of the patient. SA was the leading radiologist and was responsible for reporting the chest images and the chest CT scan.

Competing interests None.

Provenance and peer review Not commissioned; externally peer reviewed.

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