Rothia aeria: a great mimicker of the *Nocardia* species

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DESCRIPTION

An 80-year-old man was admitted to our hospital with a 2-week history of an exaggerated productive cough. He had type 2 diabetes mellitus (glycated haemoglobin 8.1%), pancreatic cancer (cT2aN0M1, stage IB) and allergic bronchopulmonary aspergillosis (ABPA) for the past few years. He was treated with antihyperglycaemic drugs and prednisolone (10 mg/day) for ABPA. No pathogens were noted on bronchial lung washing, and his condition gradually improved. However, his sputum Gram stain newly demonstrated abundant Gram-positive filamentous bacteria (figure 1A). Furthermore, 48 h after incubation of sputum with 5% sheep's blood agar (Eiken Chemical, Tokyo, Japan) at 37°C under 5% CO₂, smooth, very small white colonies appeared and when mature they were rough, dry, folded convex and adhered to the blood agar; these were identified as *Rothia aeria* using Matrix-Assisted Laser Desorption/Ionisation-Time of Flight Mass Spectrometry (MALDI-ToF-MS). *R. aeria* was first isolated from an air and water sampler in Russia's Mir space station¹ and has been detected in the mouths of healthy individuals.² It can be mistaken for *Nocardia* spp (figure 1B, presented as control) due to the morphological similarities, and discrimination between *R. aeria* and *Nocardia* spp needs further analyses, such as MALDI-ToF-MS and/or 16S rRNA. *R. aeria* rarely causes respiratory infections,³ but it should be considered in the differential diagnosis of *Nocardia* spp, especially in immunocompromised patients who are vulnerable to *Nocardia* infections.

Learning points

- ▶ *Rothia aeria* is a Gram-positive filamentous bacterium that can colonise in healthy individuals.
- ▶ *R. aeria* rarely causes respiratory infections, but it should be differentiated from *Nocardia* spp.
- ▶ The discrimination between *Nocardia* spp and *Rothia aeria* needs further analyses using MALDI-ToF-MS and/or 16S rRNA.

Contributors TS, YO and YT managed the patient. SY performed microbiological analysis.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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Figure 1 Sputum Gram stain from the patient demonstrates abundant Gram-positive filamentous bacteria (A), mimicking *Nocardia* spp sample from another patient (B).

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