20-year-old Ecuadorian woman had a positive purified protein derivative (PPD) test during routine prenatal evaluation. A chest radiograph (CXR) performed at that time was normal. Treatment for latent tuberculosis infection was not initiated. She had an uneventful delivery and then presented more than one year later with cough, fever and night sweats. Posteroanterior and lateral CXR performed in the emergency department revealed atelectasis of the right upper lobe (RUL), with superomedial retraction of the minor fissure (Figure 1A and 1B). Sputum cultures for acid fast bacilli (AFB) subsequently grew Mycobacterium tuberculosis, and the patient was started on a multidrug regimen, which was narrowed once the organism was confirmed to be sensitive. To further evaluate the nature of her RUL atelectasis, computed tomography (CT) of the chest was performed following administration of intravenous contrast, which was consistent with compression of the RUL bronchus by an adjacent mediastinal lymph node (Figure 1C and 1D). Bronchoscopic inspection undertaken to exclude neoplasia revealed a mass-like protrusion at the level of the RUL bronchial orifice that was covered with normal-appearing mucosa (Figure 1E and 1F). Endobronchial biopsies of this entity were negative for malignancy and granulomas. The patient’s RUL atelectasis was, thus, attributed to extrinsic obstruction by a tuberculous mediastinal lymph node.

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Not your ‘garden variety’ atelectasis

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Figure 1) A Posteroanterior chest radiograph showing right upper lobe (RUL) atelectasis with upward displacement of the minor fissure. B Lateral chest radiograph. C Computed tomography (CT) scan of the chest showing a mediastinal lymph node occupying the expected location of the RUL bronchus take-off (red arrow). Adjacent lymph node calcification is evident (blue arrow). There is resultant RUL atelectasis. D CT chest coronal reconstruction demonstrating obstruction at the level of the expected origin of the RUL bronchus (arrow). E Bronchoscopic image of the lesion at the level of the main carina. F Bronchoscopic image at the level of the right mainstem bronchus

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KEY LEARNING POINTS

- Obstructive RUL atelectasis is most commonly caused by neoplasia, mainly primary lung malignancy or mucus impaction.
- When the cause of RUL atelectasis is a central lung tumour, one can often appreciate the ‘reverse S-sign of Golden’ on the posteroanterior chest radiograph (Figure 2).
- The anatomy of the right middle lobe (RML) bronchus renders it particularly vulnerable to chronic or recurrent benign atelectasis due to either extrinsic bronchial compression or intrinsic bronchial narrowing. This phenomenon has been termed ‘RML syndrome’ (1). No such predisposition is known to exist in the case of the RUL.
- One of the best-described causes of RML syndrome is extrinsic compression by a calcified tuberculous right hilar lymph node (Figure 3). While recognized in children with mediastinal lymphadenopathy from primary tuberculosis, RUL atelectasis caused by a tuberculous mediastinal lymph node in an adult with reactivation tuberculosis is unusual.
- RUL atelectasis due to inflammatory intrinsic bronchial narrowing caused by Macrolide-resistant \textit{M. pneumoniae} has been reported recently, as has compression of the RUL bronchus by calcified lymphadenopathy from presumed blastomycosis (2,3). Our case similarly alerts the clinician about another ‘non-garden variety’ cause of RUL atelectasis in a young patient.

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