- Crofton J, Chaulet P, Maher D. Guidelines for the management of drug resistant tuberculosis. WHO/TB/96.210 (Rev.1). Geneva, 1996.
- Belanger AE, Besra GS, Ford ME, et al. The embAB genes of Mycobacterium avium encode an arabinosyl transferase involved in cell wall arabinan biosynthesis that is the target for the antimycobacterial drug ethambutol. Proc Natl Acad Sci USA 1996;93:11919–24.
- Mitnick CD, Shin SS, Seung KJ, et al. Comprehensive treatment of extensively drugresistant tuberculosis. N Engl J Med 2008;359:563

 –74.
- British Thoracic Society and the All Party Parliamentary Working Group on TB. Putting tuberculosis on the local agenda. London, 2008.
- Nathanson E, Lambregts-van Weezenbeek C, Rich ML, et al. Multidrug-resistant tuberculosis management in resource-limited settings. Emerg Infect Dis 2006:12:1389–97.
- Davies PD, Cullen D. Service for drug resistant tuberculosis exists in the UK. BMJ 2008:336:1324.

Pulmonary puzzle

ANSWER

From the question on page 483

Scar tissue has caused cicatricial supraglottic stenosis from histologically confirmed mucous membrane pemphigoid.

Dysphonia (from anterior glottic scarring) and dysphoea (from posterior scarring) may progress to severe stenosis, stridor and life-threatening airway obstruction. Laryngeal stenosis predominantly affects children, either as a result of a congenital glottic web or papillomatosis. The subglottis is the most common site for a stricture secondary to an intubation injury. Inflammatory causes include croup, epiglottitis and laryngotracheobronchitis. Adult causes are shown in box 1.1

Mucous membrane pemphigoid is a rare chronic systemic autoimmune disease affecting the mucous membranes. Antibodies bind to the basement membrane causing subepidermal bullae which rupture with scarring. There is a preponderance of females and the sixth decade.² Complications include ocular lesions (75% of patients) with blindness in up to 20%,³ oesophageal strictures, laryngeal stenoses (8%)⁴ and bronchial stenoses. Flow-volume loops may show airflow disruption. Ocular, laryngeal, oesophageal, nasopharyngeal and genital involvement are deemed high risk for progression carrying a worse prognosis,³ the anti-epigrilin (laminin 5) variant particularly being associated with malignancy.

Trials of management are few and inconclusive,⁵ and relapse and progression are common. Supraglottic stenosis may require repeated laser therapy, adjuvant mitomycin C or, ultimately, tracheostomy. In this case, the stenosis remains under review.

Supraglottic obstruction is illustrated as a rare cause of exertional dyspnoea.

Thorax 2009;64:515. doi:10.1136/thx.2008.101006a

REFERENCES

 Krishna PD, Malone JP. Isolated adult supraglottic stenosis: surgical treatment and possible etiologies. Am J Otolaryngol 2006;27:355–7. Box 1 Laryngeal obstruction or stenosis: aetiology and reported anatomical sites

Supraglottic

- ► Carcinomas (95% squamous)
- ► Relapsing polychondritis
- ► Mucous membrane pemphigoid
- ▶ Diphtheria
- ▶ Epiglottitis

Transglottic

- ▶ Carcinomas
- Papillomatosis
- Sarcoidosis
- Tuberculosis
- ▶ Perichondritis and radionecrosis
- Fracture

Subglottic

- ▶ Carcinomas
- Wegener granulomatosis
- Intubation injury

Othe:

- Carcinoid, amyloid, Kaposi sarcoma, metastases, gastrooesophageal reflux.
- Boedeker CC, Termeer CC, Staats R, et al. Cicatrical pemphigoid in the aerodigestive tract: diagnosis and management in severe laryngeal stenosis. Ann Otol Rhinol Laryngol 2003:112:271–5.
- 3. Whiteside OJ, Martinez Devesa P, Ali I, et al. Mucous membrane pemphigoid: nasal and laryngeal manifestations. J Laryngol Otol 2003;117:885–8.
- Gaspar ZS, Wojnarowska F. Cicatrical pemphigoid with severe laryngeal involvement necessitating tracheostomy (laryngeal cicatrical pemphigoid). Clin Exp Dermatol 1996;21:209–10.
- Sacher C, Hunzelmann N. Cicatrical pemphigoid (mucous membrane pemphigoid): current and emerging therapeutic approaches. Am J Clin Dermatol 2005;6:93–103.

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