Suppurative thyroiditis with oesophageal carcinoma

L.D.K.E. Premawardhana, J.P. Vora and M.F. Scanlon

Division of Endocrinology, Department of Medicine, University of Wales College of Medicine, Heath Park, Cardiff CF4 4XN, UK

Summary: A 68 year old, previously well woman presented with dysphagia, weight loss and a neck swelling. Investigations revealed a right-sided thyroid abscess with fistulous connection to the upper of two oesophageal carcinomas, a previously unreported association. The resistance of the thyroid to infection and the mechanisms of thyroid abscess formation in this patient are discussed.

Introduction

Suppurative thyroiditis is a clinical rarity in the Western world. Resistance of the gland to invading organisms is thought to be due to complete encapsulation, generous vascular supply and lymphatic drainage, and the presence of iodine locally which inhibits bacterial proliferation.^{1,2} Of the possible routes of infection, internal fistulae between the thyroid gland or perithyroidal space and a 'contaminated' viscus such as piriform sinus fistulae or persistent thyroglossal duct have been well documented.³ We report a case with a thyroidal abscess resulting from a fistulous connection between an oesophageal carcinoma and the thyroid gland, an association which to our knowledge has not been reported before.

Case report

A 68 year old female presented with dysphagia and loss of appetite. Intermittent dysphagia had been present for about one year resulting in a weight loss of 9 stone. A swelling in the neck had been noted one month prior to admission, which was reported as varying in size and tender.

On examination she was cachectic with a large, hard irregular tender goitre, the right side being considerably larger than the left. The whole gland moved on swallowing. The clinical impression was of a thyroid neoplasm or possibly a simple large, multinodular goitre.

Initial investigations revealed an ESR of 72 mm/h and haemoglobin 11.4 g/dl. Her thyroid function

tests were normal and she did not have thyroid antibodies. An ultrasound scan of the thyroid revealed a large mass 6 cm in diameter, arising from the right lobe, which was partly calcified and partly hypoechoic. The left lobe was normal. An iodine-123 scan revealed a large photon deficient area at the right upper pole of the thyroid.

Barium swallow showed a normal pharynx but two tumours in the oesophagus, a small tumour at the level of T1 and T2 and the other a large polypoid tumour at the junction of the middle and lower third.

Computed tomographic (CT) scan revealed a large, soft tissue mass with mixed attenuation on the right side of the neck which was thought to arise either from the right side of the thyroid or oesophagus with fistulous connection between the oesophagus and thyroid (Figure 1).

Fine needle aspiration biopsy of the thyroid mass revealed inflamed granulation tissue and polymorphs with no evidence of malignancy. During a Tru-cut biopsy of the thyroid a large amount of offensive, thick pus was aspirated, from which *Streptococcus milleri* and mixed anaerobes were grown. An upper gastrointestinal endoscopy undertaken at the same time as the biopsy confirmed the radiological findings of a large upper oesophageal tumour with a communicating fistula to an abscess surrounding the parapharyngeal and perithyroidal spaces. Histology of material from the oesophageal tumours revealed well-differentiated carcinomas.

Following the aspiration of pus from the thyroid, the swelling and tenderness disappeared. Her dysphagia became worse and a feeding gastrostomy had to be established. She was then given palliative external radiotherapy in view of the inoperability of the two oesophageal tumours. She succumbed to her illness within 3 months.

Figure 1 CT scan of neck at C3–4 level illustrating relationship of thyroid abscess (T) to oesophagus (O).

Discussion

The extreme resistance of the thyroid to infection was highlighted by Womach and Cole with their animal experiments.⁴ Infection is usually due to staphylococci, streptococci, pneumococci or the anaerobes,⁵ although rarely *Eikenella corrodens*,⁶ *Brucella*,⁷ *Aspergillus fumigatus*⁵ or *Mycobacterium chelonae*⁸ have also been documented.

In most instances, no obvious pathway for infection was detectable. However, bacteraemic and lymphatic spread, spread from contiguous organs or infection following trauma have been reported.⁹

Recent interest has centred around fistula formation between the oesophagus and the perithyroidal space.¹⁰ A communication between a hollow viscus, with a resident flora, and the thyroidal or perithyroidal space could conceivably give rise to suppurative thyroiditis, the infection originating either in the thyroid gland primarily or spreading to it from the perithyroidal space. A low-grade perforation of the oesophagus at the upper tumour site with a fistulous pathway to the perithyroidal space resulted in suppurative thyroiditis in our patient. A lowered state of immunocompetence due to her malignant cachexia may have contributed to the establishment of infection.

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