

# Papillary carcinoma of the thyroid presenting as piriform fossa mass

**KY Lau**  
FRCR

**AT Ahuja**  
FRCR

**CF Ng\***  
MBChB

**W King\***  
MD FACS

**C Metreweli**  
FRCR

Departments of Diagnostic Radiology &  
Organ Imaging & \*Surgery  
Prince of Wales Hospital  
Shatin NT, Hong Kong

## Introduction

We report a patient who had dysphagia, blood stained sputum, sore throat and hoarseness as the major presenting manifestation of papillary carcinoma of the thyroid. Clinical examination did not reveal an enlarged thyroid gland or neck mass. The initial barium examination revealed a tumour in the right piriform fossa. Ultrasound of the neck showed multiple iso/hypoechoic nodules in both lobes of the non-enlarged thyroid gland. As the aerodigestive symptoms were suggestive of carcinoma of the oesophagus, the barium study finding favoured a diagnosis of primary carcinoma of the piriform fossa.

## Case report

A sixty-year old Chinese woman presented with two weeks of sore throat, dysphagia, blood stained sputum and hoarseness. A recent barium swallow done elsewhere showed a soft tissue mass in the right piriform fossa (Figure 1). Ultrasound of the neck was also done elsewhere. They reported



Figure 1: Barium swallow showing a right piriform fossa mass with mucosal irregularity suggesting a malignant mass.

that the thyroid gland was not enlarged and moved normally with swallowing and there were six well defined oval nodules about 3.8 to 11 mm in diameter distributed in both lobes of the thyroid (Figures 2,3) and classed as a

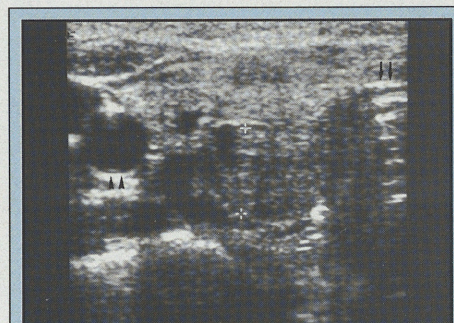


Figure 2: Transverse sonogram of the thyroid showing an ill defined, solid, heterogeneous thyroid nodule (calipers) in the right lobe of the thyroid. Arrows identify the trachea and arrowheads identify the common carotid artery.

“multinodular goitre”. No enlarged neck lymph nodes or vessel encasement were seen. There was no family history of thyroid cancer and no history of prior neck irradiation. Clinically, she was not hypothyroid. Physical examination did not detect any neck mass. Endoscopic examination showed there was a piriform fossa mass attached to the lateral pharyngeal wall with normal mobile vocal

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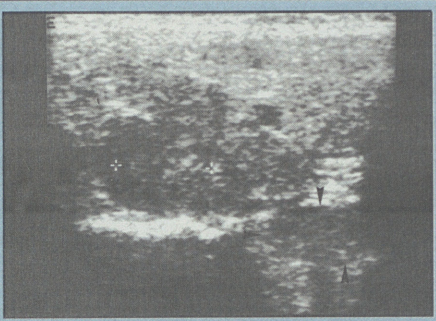


Figure 3: Longitudinal sonogram of the thyroid showing the ill defined edges of the nodule and extrathyroid extension (arrowheads). Calipers are inappropriately positioned.

cord. The rest of the aerodigestive tract was normal. Biopsy revealed the presence of adenocarcinoma with a prominent papillary pattern and positive thyroglobulin immunostaining. The films were reviewed in a clinico-radiological conference. In the ultrasound of the right lobe posteriorly the mass was largest, heterogenous and generally hypoechoic. The posterior margin of the mass could not be defined and extrathyroid spread was noted. The appearance was suggestive of a papillary carcinoma of the thyroid with extrathyroid spread. Other smaller heterogenous hypoechoic nodules were seen in the left lobe. No obvious lymphadenopathy was noted on the available scan. Intraoperative findings confirmed a right sided thyroid tumour invading into the piriform fossa which occupied one third of the hypopharynx and also involved the paraglottic groove. A small second primary was also suspected at the upper pole of the left lobe of the thyroid. Total laryngectomy, partial pharyngectomy, total thyroidectomy, paratracheal node dissection, creation of tracheolaryngeal fistula and pectoralis major myocutaneous flap were then performed.

Pathology showed there was a 4.5 x 2.5 x 2.5 cm papillary carcinoma at the posterior aspect of the right thyroid infiltrating cephalad and involving the piriform fossa. The 5 mm nodule in the

left thyroid was also confirmed to be papillary carcinoma. All the lymph nodes were benign. Postoperatively, a Bloom-Singer tube was inserted and radiotherapy arranged.

## Discussion

Although differentiated thyroid cancer most commonly presents as an asymptomatic thyroid nodule, it is notorious for its bizarre presentations. It had been reported that more than one out of ten patients with thyroid carcinomas will present with a regional cervical mass and a clinically normal thyroid gland.<sup>1,2,3,4</sup> Other unusual presentations, including parapharyngeal masses,<sup>5</sup> cervical cysts,<sup>6</sup> hemoptysis,<sup>7</sup> and pulmonary metastases<sup>8</sup> have been reported. In the case report by Weiland *et al*,<sup>7</sup> the patient presented with hemoptysis, tracheal and mediastinal invasion. To the best of our knowledge, our patient is the only reported case of papillary carcinoma of the thyroid presenting as piriform fossa mass. Aerodigestive invasion by thyroid cancer is rare and has been estimated to occur in only 1 percent to 6.5 percent of all patients with thyroid cancer.<sup>9</sup> The incidence of intraluminal involvement by thyroid cancer is 0.9 percent<sup>10</sup> and therefore uncommon.

Thyroid carcinoma that presents with cervical metastases demonstrated multiplicity in 40-90 percent of patients.<sup>2,11,12</sup> Although the role of ultrasound in thyroid carcinoma is well established, a small focus of thyroid carcinoma may be difficult to demonstrate. De Jong *et al*<sup>4</sup> showed that in 25 percent of thyroid carcinoma with proven metastases, preoperative ultrasound and radionuclide studies did not demonstrate a primary thyroid tumour. Therefore, even normal thyroid imaging results do not preclude the diagnosis of thyroid carcinoma. Surprisingly, in our

patient, even though the papillary carcinoma involved both lobes of the thyroid with infiltration to the right piriform fossa, none of the lymph nodes showed evidence of metastasis histologically.

The major importance of this paper is to draw attention to the fact that despite adequate visualization and demonstration, the radiologist performing the scan was unaware and unable to make the diagnosis of papillary carcinoma. The presence of a solid, hypoechoic, ill defined nodule with or without punctate calcification and characteristic adenopathy,<sup>13</sup> should always raise the suspicion of a papillary carcinoma and fine needle aspiration cytology should be performed to confirm the diagnosis.

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