CASE OF THE MONTH

Can leopards change their spots?

¹P C MODAYIL, ²A JACOB, FRCS (ORL) and ³A LESLIE, FRCR

¹Department of Otorhinolaryngology, University Hospital Lewisham, London, UK, ²Department of Otorhinolaryngology, University Hospital Lewisham, London, UK and ³Department of Radiology, University Hospital Lewisham, London, UK

Received 27 November 2009

Revised 28 March 2010

Accepted 1 April 2010

DOI: 10.1259/bjr/18427837

© 2010 The British Institute of Radiology

Case 1

A 63-year-old man presented with a right neck lump. It was very hard to the touch, non-tender and had been present for 2 months. There were no other symptoms

and he was otherwise fit and well. A thorough ear nose and throat (ENT) examination including flexible nasolaryngoscopy did not reveal any other abnormality. Further evaluation of the lump with ultrasound (Figure 1a) and then CT (Figure 1b) was performed.

Figure 1. (a) Heavily calcified lumps in the right jugular chain. (b) CT without iv contrast shows very heavily calcified neck lymph node. (c) 8 mm lesion with microcalcification in upper pole of the right thyroid. (d) CT without iv contrast; two tiny flecks of calcification are seen in the right upper pole of the thyroid at the site of the lesion (arrows).

Case 2

A 43-year-old woman presented with a 6 month history of an ill-defined left neck swelling. There were no other symptoms. ENT examination including flexible nasolaryngoscopy did not reveal any other abnormality. The mass was evaluated with ultrasound (Figure 2a).

What abnormalities are demonstrated?

Can you think of a unifying diagnosis?

Figure 2. (a) Longitudinal section view of left neck showing loculated cystic mass. (b) 4 mm lesion, hypoechoic, ill-defined, with microcalcification in upper pole of left thyroid.

Address correspondence to: Prince Cheriyan Modayil, 17 Tuckfield house, Bovemoor's lane, Exeter, EX2 5DS UK. E-mail: princemodayil2000@yahoo.co.in

Diagnosis

Ultrasound of the first patient showed several densely calcified masses within the right side of the neck (Figure 1a). At the time of ultrasound, the thyroid was examined and in the right upper lobe there was a hypoechoic 8 mm mass that had multiple tiny echogenic flecks within it (Figure 1c). These appearances raised the possibility of a papillary carcinoma of the thyroid with metastatic neck nodes; therefore, fine needle biopsy of the thyroid lesion and the lateral neck masses was performed. A CT scan was performed for further evaluation. Because of the possibility of thyroid cancer it was carried out without iv contrast. This confirmed dense calcification within the neck nodes (Figure 1b) and microcalcification within the right thyroid lesion (Figure 1d).

The second patient had a multiloculated cystic mass within the left side of the neck measuring $64 \times 23 \times 19$ mm (Figure 2a). Again, at the time of ultrasound the thyroid was inspected and a 4 mm hypoechoic mass with punctuate calcification was demonstrated within the left upper thyroid (Figure 2b). Fine needle biopsy of the thyroid mass was performed.

In both cases metastatic papillary carcinoma was suspected from biopsies and confirmed histologically.

Discussion

Papillary thyroid carcinoma accounts for 80% of all cases of thyroid malignancy. Approximately 50% of patients have cervical lymph node metastases at the time of initial presentation. In approximately 5–14% of cases, the thyroid gland is clinically normal and the first sign is the appearance of a single lateral cervical mass [1].

Metastatic lymph nodes often contain areas of microcalcification similar to those seen within the primary

tumour, but to see such dense calcification is unusual. Likewise, it is well documented that metastatic papillary carcinoma of the thyroid may undergo cystic degeneration [2], but it is unusual to see such a large, multiloculated mass within the neck with no solid component. In both of these cases the sonographic appearances of the primary were typical of papillary carcinoma but the metastatic lymph node appearances were highly atypical.

Because papillary thyroid cancer occurs more commonly in patients under 40 years of age, it is important to differentiate these lesions from other benign neck lumps. This distinction may be more difficult with purely cystic neck lumps.

When assessing unusual neck masses that contain calcification or have a cystic element, it is important to consider papillary carcinoma of the thyroid and examine the thyroid with ultrasound at the same time that the neck lump is being evaluated. When microcalcification is noted within a solitary thyroid nodule the risk of malignancy is very high. It is present in 61% of the malignant nodules [3]. Any suspicious thyroid lesion, even tiny lesions should be investigated by fine needle biopsy.

Can leopards change their spots? No, but papillary carcinoma of the thyroid can.

References

1. Attie J, Setzin M, Klein I. Thyroid carcinoma presenting as an enlarged cervical lymph node. *Am J Surg* 1993;166:428–30.
2. Wunderbaldinger P, Harisinghani MG, Hahn PF, Daniels GH, Turetschek K, Simeone J, et al. Cystic lymph node metastases in papillary thyroid carcinoma. *AJR Am J Roentgenol* 2002;178:693–7.
3. Chammass MC, de Araujo F, Vergilius JF, Moysés RA. Predictive value for malignancy in the finding of microcalcifications on ultrasonography of thyroid nodules. *Head Neck* 2008;30:1206.