Warthin's tumour mimicking nodal involvement by thyroid cancer and unexplained elevation of serum thyroglobulin

To the Editor: Warthin's tumour (WT) is also known as adenolymphoma or papillary cystadenoma lymphomatosum. It is the most common 'monomorphic' adenoma of the major salivary glands and accounts for 12% of all parotid tumours [1, 2]. It is benign and is predominantly found within the parotid gland. The majority of extra-parotid WT occur in the peri-parotid and cervical lymph nodes. They are usually incidental findings and arise as a result of inclusion of salivary gland tissue within the adjacent lymph nodes during embryogenesis [3]. We describe a patient with an extra-parotid WT mimicking nodal relapse of a previously treated invasive follicular thyroid cancer on ultrasound, computerised tomography (CT) and post-treatment iodine-131 (^{131}I) whole body scan.

An 81 years old asymptomatic woman was noted to have a rising serum thyroglobulin (Tg) level. Ten years previously, she had an invasive follicular thyroid cancer treated with total thyroidectomy followed by an ablative dose of ^{131}I, achieving complete remission with an undetectable serum Tg in the absence of interfering antibodies and negative post-treatment ^{131}I whole body scan. Her serum levels of thyroid-stimulating hormone remain adequately suppressed throughout. Non-contrast CT of the neck, thorax and abdomen performed to evaluate rising Tg revealed an enlarged right low level 2, cervical lymph node measuring 17mm in short axis dimension (Fig. 1A). This was confirmed on neck ultrasound. Bone scan was unremarkable. Fine needle aspiration cytology of this neck node was non-diagnostic. She was treated with 5.6GBq of ^{131}I for probable nodal recurrence. Post-treatment whole body ^{131}I scan performed 10 days following treatment showed uptake in the superior aspect of her right neck (Fig. 1B). This corresponded to the position of the lymph node noted on her diagnostic CT. Despite ^{131}I treatment, her unstimulated serum Tg continued to rise to 27.7ng/mL. A repeat CT showed no change in the size of the cervical node with no evidence of recurrent disease elsewhere. A right-sided neck dissection revealed no malignancy but a Warthin's tumour within a level 2 cervical lymph node. No cause for the rising serum Tg was found on further investigations including fluorine-18 fluorodeoxyglucose positron emission tomography-computed tomography (^{18}F-FDG-PET/CT). In view of her continued lack of symptoms, she was managed with close observation and imaging surveillance.

A continuously rising serum Tg from undetectable levels at follow-up suggested thyroid cancer recurrence. Imaging was required to look for sites of recurrent or metastatic disease. Fine needle aspiration cytology of cervical nodes may not always be diagnostic though its sensitivity may be improved by measuring Tg level in the needle washout fluid [4]. Empirical ^{131}I treatment can be considered which may be both therapeutic and diagnostic [5]. Data from the published literature showed that 63% of these patients will achieve a reduction in serum Tg while 62% will demonstrate uptake on whole-body scanning post-treatment [6]. However, a reduction in serum Tg alone does not equate therapeutic benefit and there is no evidence that such an approach improves survival. Moreover, normalisation of serum Tg may occur spontaneously in a substantial proportion of patients without treatment [7].

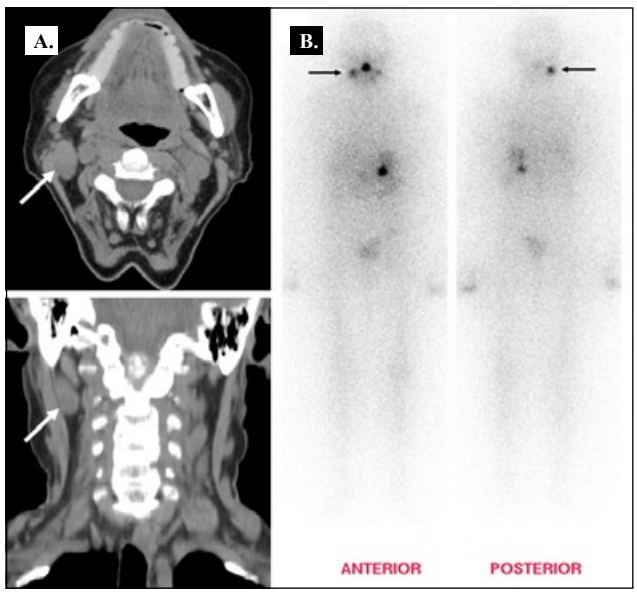

Figure 1. **A**: Non-contrast CT of the neck showing an enlarged right level 2, cervical lymph node. **B**: Post-treatment ^{131}I whole body scan showing tracer accumulation within the superior right neck corresponding to the cervical node on CT. There is also tracer accumulation in the midline, stomach, bowel and urinary bladder which is physiological.

The cause of our patient's rising serum Tg remains unknown. Preparation before ^{131}I whole body scanning was adequate and there was absence of circulating interfering Tg antibodies. A recent review identified presence of low volume metastatic thyroid cancer too small to be visualised on ^{131}I scan and dedifferentiated tumour that lost its ability to concentrate iodine as other possible causes of an elevated serum Tg and false-negative ^{131}I whole body scan [8].

In conclusion, our case highlights two important learning points. Firstly, extra-parotid WT can mimic lymph node metastasis on ultrasound and CT in patients with a history of thyroid malignancy. It should therefore form part of the differential diagnosis in such patients with cervical nodal enlargement. Secondly, WT can lead to false-positive result on ^{131}I whole body scan. This should always be considered, especially if the serum Tg continues to rise despite uptake on the post-treatment scan.

All authors declare no actual or potential conflicts of interest.

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