Dear Sir,

Although secondary tumors involving the kidneys are not uncommon, it is rare to find thyroid carcinoma giving rise to solitary renal metastasis. We describe such a case with atypical features.

A 91-year-old Chinese woman presented with acute onset of epigastric pain and vomiting. She also suffered from parkinsonism, an old myocardial infarction and osteoarthritis of the hip. Physical examination on admission showed features of dehydration and thyroid enlargement. Investigation indicated an increased white blood cell count (22.8 × 10⁹/l), elevated urea (13.3 mmol/l) and creatinine levels (174 µmol/l). The general condition of the patient deteriorated and she developed sudden cardiac arrest a few hours after admission.

At autopsy, the cause of death was seen to be small bowel gangrene as a result of severe atherosclerosis of the superior mesenteric artery. The thyroid was slightly enlarged and weighed 27 g. It had a multinodular appearance. Besides, a 5-cm brown nodule was found incidentally in the middle pole of the left kidney (fig. 1). The nodule was well demarcated from the surrounding renal parenchyma. The cut surfaces were light brown, variegated and of a colloid-like substance. It had the gross appearance of tissue from the thyroid gland. Microscopic examination of both kidneys revealed senile nephrosclerosis with focal glomerulosclerosis, tubular atrophy and retention cysts. Sections of the left kidney mass showed metastatic follicular carcinoma surrounded by a pseudocapsule. The thyroid gland showed a tiny focus of primary follicular carcinoma in the right lobe on reexamination. Both vascular and capsular invasion were present.

Follicular carcinomas of the thyroid are known to have a high tendency to hematogenous spread. However, the authors could only find 10 cases in which renal metastases has been reported in follicular carcinomas of the thyroid [1-6]. The clinicopathological features were only available in 3 cases. The features of these cases and the present one are listed in table 1. All the patients were females. This is not surprising as follicular carcinomas were more commonly detected in women. It is also worth noting that there

Fig. 1. A well-demarcated mass (arrows) was noted in the middle pole of the left kidney which has the gross appearance of thyroid tissue.

Table 1. Renal metastases from thyroid follicular carcinoma

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<td>K.Y. Lam, FRCPA, Department of Pathology, Queen Mary Hospital, Hong Kong (Hong Kong)</td>
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Remarks
Takayasu et al. [1] F/44 abdominal mass 3 bilateral, multiple nodules ? carcinoma in lumbar vertebra
Davis and Corson [2] F/49 incidental IVU finding 18 bilateral (right 2.3 cm, left 4.4 cm) Johnson et al. [3] F/66 hematuria 37 left kidney carcinoma in the lungs; the right kidney has been donated to her son Lam [this study] F/99 incidental autopsy finding - left kidney, 5 cm
IVU = Intravenous urography; years = years after detection of primary tumor.

might be a long latency period before the appearance of secondary tumors. In the 3 previously reported cases, the renal metastases were found 3, 18 and 37 years, respectively, after detection of the primary thyroid carcinomas. The pathogenesis of the occurrence of renal metastasis in the absence of secondaries in the other sites is not well described. The mode of spread is likely to be hematogenous. The diseased kidney, like senile nephrosclerosis in this case, may provide a favorable microenvironment for the growth of the metastatic follicular carcinoma. On the other hand, the possibility of tumor spread through minor venous or lymphatic collaterals between the thyroid gland and the kidney may also explain the phenomenon. Renal resection might be useful in this situation as the lesion is solitary.

The present case has certain atypical features. Firstly, the renal metastasis in this case was solitary and unilateral in contrast to the fact that most renal metastases are multiple and bilateral. Moreover, there were no other sites of secondary tumor apart from the kidney. Also, the renal mass was the largest metastatic thyroid follicular carcinoma of the kidney reported in the literature and it was unusual for such a large mass to remain asymptomatic. Lastly, the patient is the oldest noted in the literature harboring renal metastasis from follicular carcinoma of the thyroid. This case highlights that diagnosis of secondary tumor of the kidney should still be considered even if the renal mass is large, solitary and unilateral.

References

Nephron 1996;73:323-324