I-131 false positive uptake in a huge parapelvic renal cyst

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Abstract

A male patient had undergone total thyroidectomy for thyroid papillary carcinoma. He was administered thyroablation activity of 3.7 GBq (100 mCi) radioiodine for thyroid remnant. Whole body imaging after diagnostic activity of 300 MBq (8.1 mCi) 131-I demonstrated only intense abnormal focal radioiodine uptake in the right side of the upper abdominal region (Figure 1). The serum thyroglobulin level was low at 0.4 mg/l, and the level of antithyroglobulin was < 50 U/ml.

Ultrasonography demonstrated a large irregular but well-defined anechoic structure (59 x 63mm) in the centre of the right kidney — a cyst in the parapelvic region. Renal cysts can lead to erroneous interpretation of radioiodine scintigraphy.

Key words: I-131 scintigraphy, I-131 abdominal uptake, renal cyst, thyroid cancer, I-131 therapy

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Introduction

Whole-body I-131 scintigraphy remains an important technique for diagnosing metastases from differentiated papillary or follicular thyroid carcinoma. We present a case of intense I-131 uptake in a previously unsuspected huge parapelvic renal cyst.

Case report

A 65-year-old man had undergone total thyroidectomy for thyroid papillary carcinoma. He was administered thyroablation activity of 3.7 GBq (100 mCi) radioiodine for thyroid remnant. Whole body imaging 3 days after diagnostic activity of 300 MBq (8.1 mCi) 131-I demonstrated only intense abnormal focal radioiodine uptake in the right side of the upper abdominal region (Figure 1). The serum thyroglobulin level was low at 0.4 mg/l, and the level of antithyroglobulin was < 50 U/ml.

Ultrasonography demonstrated a large irregular but well-defined anechoic structure (59 x 63mm) in the centre of the right kidney. Conclusion: There was a simple cyst in the parapelvic region (Figure 2).

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Figure 1 Whole body radioiodine scintigraphy after diagnostic activity of 131-I.

Figure 2. Ultrasound imaging of the right kidney.
Retained urine in a dilated renal collecting system, and ureteral and bladder diverticulum have been reported as false-positives for thyroid cancer in the abdominal and pelvic areas [1, 2]. Renal cysts are additional renal pathologies which can lead to erroneous interpretation of radiiodine scintigraphy [3–5]. I-131 activity within the renal cyst supports the concept that iodide is subject to an active secretory process by the renal tubule [5].

References


