

thyroid gland abnormality. Immunohistochemical stains performed on the tissue sections showed diffuse strong nuclear immunoreactivity for PAX2 and PAX8, and negativity for thyroid transcription factor (TTF-1) and Thyroglobulin (TG) in the tumor cells. Hence, based on the morphology and the immunohistochemical profile, a diagnosis of TLFCK was rendered.

## **FINAL DIAGNOSIS**

Primary Thyroid-like Follicular Carcinoma of the Kidney.

## **DISCUSSION**

Renal masses can be neoplastic or non-neoplastic. Renal masses can be identified using various imaging modalities such as US, Computerized Tomographic scan and Magnetic resonance imaging. These radiologic techniques can categorize renal masses as malignant, benign, and indeterminate. Indeterminate masses are the lesions that cannot be definitely categorized as either malignant or benign based on their radiologic characteristics. Hence, pre- or perioperative sampling of these lesions becomes mandatory for a definitive diagnosis. More importantly, it is mandatory to distinguish primary renal neoplasms from metastatic tumors as their managements vary. Patients with primary renal neoplasms may undergo surgical resection or cryoablation of the mass, while metastatic tumors are usually widely disseminated and the patients are usually spared for a resection and are candidates for systemic chemotherapy. Because of the significant differences in the management of primary tumor versus a metastatic tumor, it is very important to distinguish between these two entities. This is where distinguishing a TLFCK from a metastatic thyroid carcinoma becomes important. The major differential diagnoses TLFCK include follicular carcinoma of thyroid, carcinoid tumor, and thyroidization of tubules in ESRD.

TLFCK is a tumor with low malignant potential, although few cases with metastases to the renal hilar lymph nodes, lungs, and retroperitoneal lymph nodes have been reported.<sup>1,5</sup> Follicular carcinoma of thyroid shows a striking resemblance to TLFCK, raising the possibility of metastasis from thyroid. However, physical examination and radiographic studies help to narrow down the differential diagnosis. Also a negative immunostaining for TTF-1 and immunoreactivity for renal tubule associated markers-as seen in our case-aid in arriving at a definitive diagnosis.<sup>6</sup> Follicular carcinoma of thyroid metastatic to the kidney is rare.<sup>7,8</sup> PAX-2 is a nuclear transcription factor in renal development.<sup>9</sup> PAX-2 nuclear positivity is seen in renal tumors,<sup>9-11</sup> nephrogenic adenoma,<sup>12</sup> and ovarian epithelial neoplasms.<sup>13,14</sup> PAX-2 is a useful marker for distinguishing metastatic renal cell carcinoma from its potential morphologic mimics. But it may be expressed in non-renal tumors such