Leiomyosarcoma of the Kidney

W Aiken[1], T Gibson[2], S Williams[1], D Gaskin[2]

ABSTRACT

The case of a 42- year old woman with leiomyosarcoma of the kidney, a very rare renal lesion, is presented. Leiomyosarcomas are the most common of the primary renal sarcomas which account for less than 1% of renal tumours in adults.

El Leiomiosarcoma del Riñón

W Aiken[1], T Gibson[2], S Williams[1], D Gaskin[2]

RESUMEN

Se presenta el caso de una mujer de 43 años de edad con un leiomiosarcoma del riñón – una lesión renal muy rara. Los leiomiosarcomas son los más comunes de los sarcomas renales primarios, y representan menos del 1% de los tumores renales en adultos.

West Indian Med J 2009; 58 (2): 183

INTRODUCTION

Primary sarcomas of the kidney, first described by Berry in 1919 (1), account for less than 1% of kidney tumours in adults (2). Leiomyosarcomas, the most frequently occurring, comprise approximately 50% of cases (2). We describe a case of renal leiomyosarcoma seen at the University Hospital of the West Indies and comment on important characteristics of this lesion.

Case Report

A 42-year old woman presented to the Urology Clinic at the University Hospital of the West Indies (UHWI) with a 3-month history of dull right flank pain. There were no constitutional or lower urinary tract symptoms or haematuria. Examination revealed a well-nourished middle-aged woman with a ballotable, smooth, tender mass in the right flank. A diagnosis of a right renal tumour was made and a computed tomography (CT) scan demonstrated a normal left kidney and a large, heterogeneously enhancing right renal mass measuring 14 (AP) x 12 (width) x 15 cm with several cystic areas (Fig. 1). The mass involved the psoas muscle and displaced the inferior vena cava (IVC) medially. There was no para-aortic lymphadenopathy. Urine microscopy was normal as were her chest radiograph and serum biochemistry. Her haemoglobin was 11.2 g/dl.

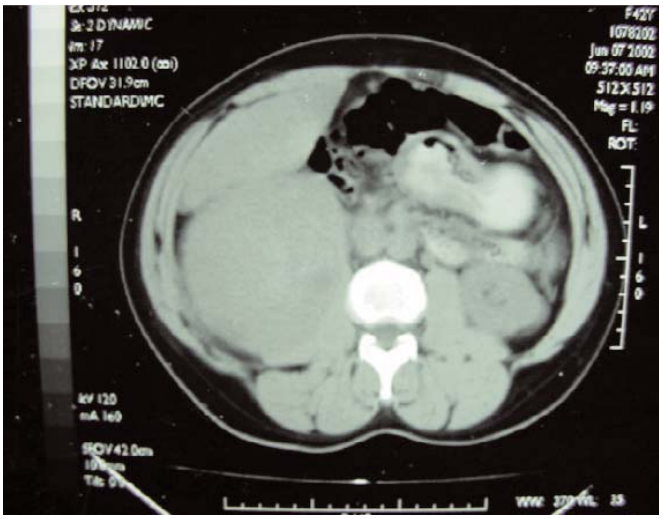

Fig. 1: CT scan of abdomen demonstrating large right renal mass

From: [1]Department of Surgery, Radiology, Anaesthesia and Intensive Care, and [2]Department of Pathology, The University of the West Indies, Kingston 7, Jamaica, West Indies.

Correspondence: Dr W Aiken, Department of Surgery, Radiology, Anaesthesia and Intensive Care, Section of Surgery, The University of the West Indies, Kingston 7, Jamaica, West Indies. Fax: 970-4302, e-mail:

A radical nephrectomy was done via a thoraco – abdominal approach. The right kidney seemed completely replaced by a fleshy tumour which perforated Gerota's fascia and was adherent to the psoas muscle. There was no evidence of renal vein or IVC permeation by tumour thrombi, lymphadenopathy or hepatic metastasis. The postoperative course was uneventful. She was discharged on the 7th postoperative day and has remained well at 7 months post radical nephrectomy.

Pathological Findings

The specimen weighed 1593g and, on sectioning, revealed a 15 cm firm, tan tumour with a whorled cut-surface showing areas of infarction. It appeared to be encapsulated along its free margin, but elsewhere, seemed to merge with the dilated renal pelvis and with the parenchyma which was compressed to a thin peripheral rim. Histology (Fig. 2) revealed a partly encapsulated tumour composed of intersecting fascicles of spindle – shaped cells with pleomorphic vesicular nuclei that varied from blunt – ended and cigar – shaped to large and irregular. Large, multinucleated cells were also present and mitotic activity was brisk. The tumour infiltrated the surrounding fibrous capsule and extended to involve the muscularis propria of the renal pelvis. The histologic impression of leiomyosarcoma was supported by immunohistochemistry. Sections of the adrenal gland were unremarkable.

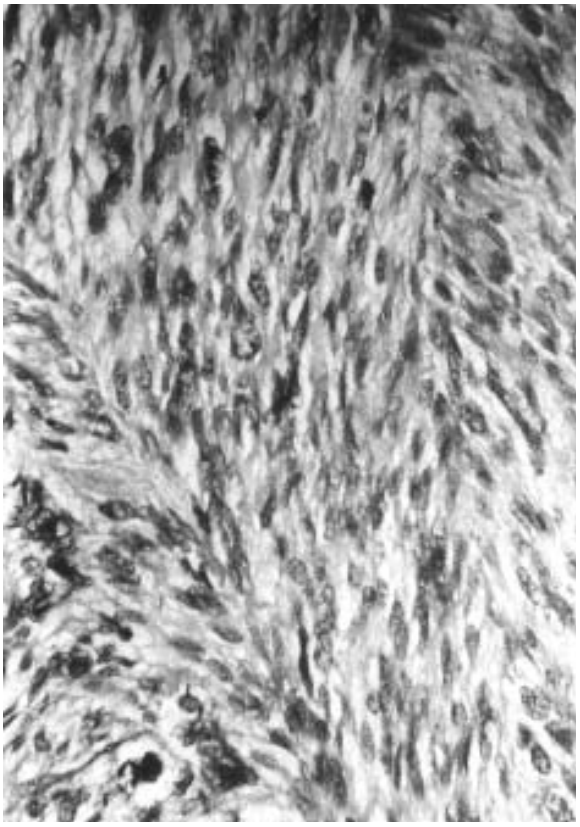

Fig. 2: Fascicles of spindle – shaped cells with markedly pleomorphic nuclei. An abnormal mitotic figure is identified in the upper left hand corner. (Haematoxylin & Eosin, X 400).

DISCUSSION

Primary sarcomas of the kidney are uncommon, comprising less than 1% of renal tumours. Leiomyosarcomas occur most frequently, accounting for 50% of these (2). They generally occur in younger patients and the gender ratio is equal (2). Presentation is usually with flank pain and a palpable mass (3). Their site of origin is the renal capsule while in others it arises from the kidney or hilar blood vessels (3). Extension into perinephric fat and adjacent organs is common (3). They tend to be large, firm tan tumours, usually greater than 10 cm (3) and their classic histologic features were present in this case. Cytogenetic aberrations are similar to those seen in leiomyosarcomas elsewhere (4). They are aggressive and rapidly progressive tumours with 5-year survival rates of 29–36%, most patients dying within 1 year of diagnosis (5). A better prognosis is associated with tumour size below 5 cm, low histologic grade, absence of lymph node metastases and radical surgery (5) which is the only form of treatment as adjunctive therapy does not alter the clinical course.

REFERENCES

1. Berry F. Report of 3 cases of combined tumors of the kidney in adults. J Med Res 1919; **40:** 459.
2. Grignon D, Eble J. Renal Neoplasms. In: Jennette J, Olson J, Schwartz M, Silva F, eds. Hepinstall"s Pathology of the kidney. Philadelphia: Lippincott – Raven; 1998: 1541–73.
3. Reuter V, Gaudin P. Adult Renal Tumours. In: Sternberg S, Antonioli D, Carter D, Mills S, Oberman H, eds. Diagnostic Surgical Pathology. Philadelphia: Lipincott Williams and Wilkins; 1999: 1785–1824.
4. Van de Berg E, Molenar W, van Echten J, Dam A, Mensink H, deJong B. Cytogenetic analysis of leiomyosarcoma of the kidney. Cancer Genet Cytogenet 1994; **72:** 126–9.
5. Dominici A, Mondani N, Nesi G, Travaglini F, Di Cello V, Rizzo M. Cystic Leiomyosarcoma of the kidney: an unusual presentation [Abstract]. Urologia Internacionales 2001; **65:** 229–31.