Bahrain Medical Bulletin, Vol.23, No. 1, March 2001

Medical Quiz

K S Ratnakar, MD

Thirty four years old Bahraini female patient was a known case of hypertension on tenormin and she was admitted to surgical department with 3 month history of generalized body ache, night fever and left flank pain. Abdominal CT scan revealed left renal mass. The patient had left radical nephrectomy in September 2000.

In October 2000, the patient was readmitted with a history of haemoptysis and left lower limb pain. CT scan revealed extensive liver metastasis, retroperitoneal lymphadenopathy, small left pleural effusion and few ill-defined pulmonary lesions (?Metastasis). Bone scan revealed multiple bone metastasis. CBC showed normocytic, normochromic anaemia. Liver Function Test (LFT) showed, total Protein 76 gm/L, Albumin 21 gm/L, Globulin 55 gm/L, Bilurubin 9 µmol/L, Alkaline Phosphatase 563 U/L, Glutamil Transp eptidase 851 U/L, Serum Calcium 2.87 mmol/L, Phosphate 1.5 mmol/L, Serum Magnesium 0.76 mmol/L, Urea 9.7 mmol/L, Na 130 mmol/, Chloride 92 mmol/L, Bicarbonate 25 mmol/L and Creatinine 95µmol/L .

Pathological findings

The left nephrectomy specimen with tumour measuring 13 x 10 x 8 cms predominantly occupying the renal pelvis and infiltrating into the upper pole of the kidney. The tumour showed areas of necrosis and haemorrhage and elsewhere was soft and uniformly gray white. The cortex was clearly demarcated and discernible distinctly at several points. The renal vessels and perinephric fat were inflitrated by the tumour. Formalin fixed, paraffin embedded tissue sections were stained with haematoxylin and eosnin, Alcian-PAS, Fontanamason. Several sections were submitted for immunohistochemical studies. The immunohistochemical stains carried out included CEA (Carcinoembryonic antigen), Desmin, S100, monoclonal NSE (Neuron specific enolase) and LCA (leucocyte common antigen).

Sections from different sites showed similar features. The lesion was composed of uniformly round, polygonal and spindle cells with scant cytoplasm and dark nuclei. In some areas, the sheets of cells were separated by broad bands of collagen, at other, the

cells were closely packed with no appreciable stroma. The cells showed prominent nucleoli and frequent mitosis (10-15 / 10 type). There were wide areas of haemorrhage and necrosis. No glomeruloid structures or identifiable mesenchymal elements were seen. The tumour extended into perinephric fat and involved renal vessels. Fontana stain revealed argyrophilic granules. Immunohistochemical marker studies revealed positive S100. Monoclonal NSE and other markers were negative.

Q1. What are the diagnostic possibilities of this renal mass ?

Q2. What lesions of kidney constitute 'small round cell tumour'?

Q3. What was the conclusion based on immunohistochemistry ?