Liver metastasis in renal chondrosarcoma

D Mehanna, F M Abu-Zidan, S Rao

ABSTRACT

A 39-year-old woman who had a left radical nephrectomy for a renal chondrosarcoma presented 18 years later with a large epigastric mass and deep jaundice. The patient was very dyspnoeic and had a feeling of continuous pressure on her chest. Computed tomography arterioportography of the abdomen showed that the mass involved both lobes of the liver. Multiple non-anatomical resections of tumour masses were performed, including a mass arising from the falciform ligament, left lateral segment, and segments VII and VIII. The largest resected mass weighed 2.5kg and had a diameter of 15cm. Histopathology of the hepatic metastasis was similar to the original renal chondrosarcoma. The patient was followed up for 24 months postoperatively and had symptomatic relief. Our case demonstrates the slow-growing nature of this tumour and the usefulness of palliative surgery despite large tumour load.

Keywords: chondrosarcoma, extraskeletal chondrosarcoma, renal tumour, liver metastasis.

Singapore Med J 2004 Vol 45(4):183-185

Department of Surgery
Royal Perth Hospital
Box 2213 GPO
Perth 6847
Western Australia
Australia

D Mehanna, MBBS, BSc (Med)
Registrar

S Rao, MBBS, FRACS
Head

Department of Surgery
Faculty of Medicine and Health Sciences
UAE University
PO Box 17666, Al Ain
United Arab Emirates

F M Abu-Zidan, FRCS, PhD, DipApplStat
Associate Professor

Correspondence to:
Dr Fikri Abu-Zidan
Fax: (971) 3767 2067
Email: fabuzidan@uaeu.ac.ae

INTRODUCTION

Extraskeletal chondrosarcoma is a rare malignant neoplasm that was first described by Stout and Verner in 1953[1]. It may occur in the head and neck, brain, meninges, trunk, retroperitoneum and extremities[2]. Chondrosarcoma has a tendency to metastasise to unusual locations, often after remarkable period of delay[2]. We report a case that exemplifies the slow-growing nature of this tumour and the usefulness of palliative surgery despite large tumour load.

CASE REPORT

A 39-year-old woman presented with a large epigastric mass, jaundice and dyspnoea. She had previously had a left radical nephrectomy for a renal chondrosarcoma in 1983. The tumour was localised with no evidence of metastasis at that time. On examination, the patient was cachectic and deeply jaundiced. A firm fixed mass that was bulging from the epigastrium was felt. She had a haemoglobin concentration of 113g/L, serum bilirubin of 78 μmol/L, ALT of 41U/L, INR of 1.1, serum protein of 82g/L, and serum albumin of 38g/L.

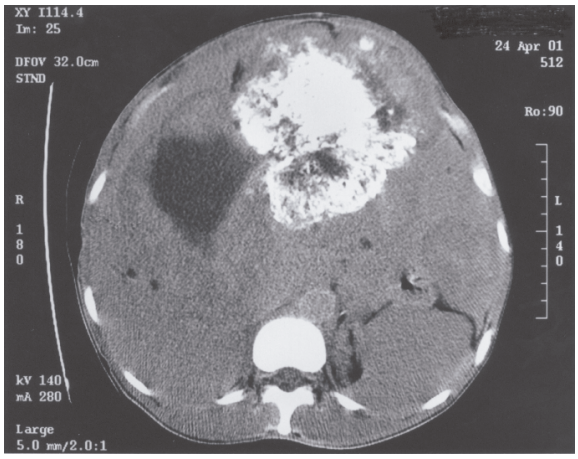

Fig. 1 CT arterioportography of the liver shows a large tumour involving both lobes with calcification on the left side and necrosis of the right side. The anterior abdominal wall is attenuated due to the pressure of the tumour.

Abdominal ultrasonography showed a tumour of at least 10 cm diameter, that contained areas of extensive calcification. The mass was inseparable from the liver edge and had large hypoechoic areas, that did not exhibit increased vascular flow, consistent with central necrosis. A further 2cm nodule was seen in the right liver lobe, consistent with metastasis. Mild biliary dilatation secondary to the mass pressure was demonstrated. Computed tomography (CT) arterioportography of the abdomen (Fig. 1) showed that the mass involved both lobes of the liver. The posterior aspects of both lobes had a normal appearance. Endoscopic netrograde cholangiopancreatography (ERCP) showed a displaced and distorted duct system in the right and left lobes, with areas of narrowing and mild dilation. A sphincterotomy was performed, with stenting of the right hepatic duct system and a major duct draining the medial portion of the left lobe.

The patient continued to be dyspnoeic and had a feeling of continuous pressure on her chest. There was evidence of lung micro-metastasis shown on chest radiographs and CT of the thorax. A decision was taken to resect this tumour in order to reduce the pressure on the chest. At operation, a huge liver mass was seen arising from the falciform ligament, extending into the abdominal wall and compressing the liver parenchyma. Multiple metastatic lesions were located in left lateral segment, segment VII, and segment VIII. Multiple non-anatomical resections of the tumour mass were performed, including the mass (Fig. 2) arising from the falciform ligament, left lateral segment, and segments VII and VIII. The right hepatic duct was inadvertently entered, revealing the stent. This was repaired with prolene sutures and a T tube placed.

The resected mass weighed 2.5kg. It had a diameter of about 15cm (Fig. 3). Histopathology of the hepatic metastasis was similar to the original renal chondrosarcoma. It showed cellular solid areas associated with large lobulated nodules of cartilage. The solid areas had intermediate to large polygonal neoplastic cells with round to oval-shaped nuclei, a fine chromatin pattern, and ill-defined pale eosinophilic cytoplasm. The cartilage varied from being immature to being normal and mature. Some chondrocytes had large nuclei with irregular contours.

Two months after surgery, the patient felt much better, with improvement of her breathing with mass pressure decrease (Fig. 4). Serum bilirubin returned to normal and the patient gained weight. Twenty four months post-operatively, the patient was still alive but had recurrence of the liver metastasis. She also developed pleural effusion which was treated by repeated aspiration.

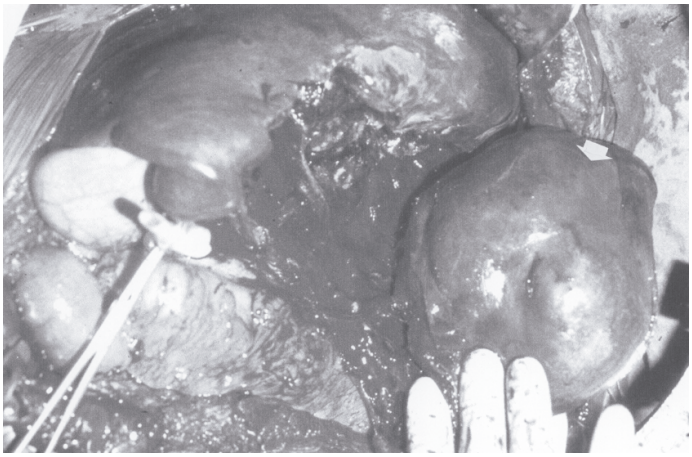

Fig. 2 Intraoperative photograph shows the tumour prior to removal. A huge mass (arrow) is seen arising from the falciform ligament, extending into the abdominal wall and infiltrating both liver lobes.

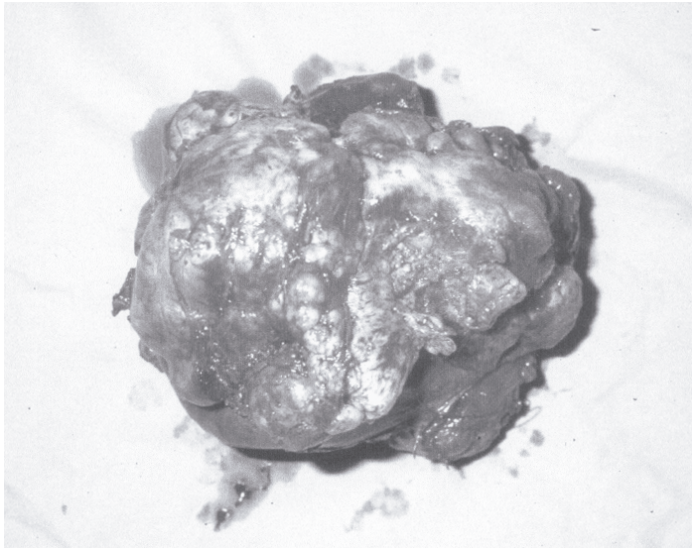

Fig. 3 Photograph of the resected specimen shows a large bosselated and lobulated tumour with areas of haemorrhage and necrosis. Sections through it showed a grey-white solid tumour with areas of calcification.

DISCUSSION

Primary chondrosarcoma of the kidney, an extraskeletal tumour, is extremely rare. Pitfield et al were the first to describe this tumour in 1981[3]. It is seen mainly in women in their twenties and thirties[2,5], and presents with abdominal pain or mass[3,4]. Abdominal radiographs may show calcification in the renal region. Extraskeletal chondrosarcomas are known to produce widespread metastases[2]. Hepatic metastasis of a soft tissue chondrosarcoma has been reported before, was treated with percutaneous ethanol injection and followed-up for one year [5].

The prognosis for patients with extraskeletal chondrosarcoma will vary more than with conventional chondrosarcoma. Some patients may live for long periods after surgical resection [5]. Although spontaneous regression may occur, metastatic chondrosarcoma

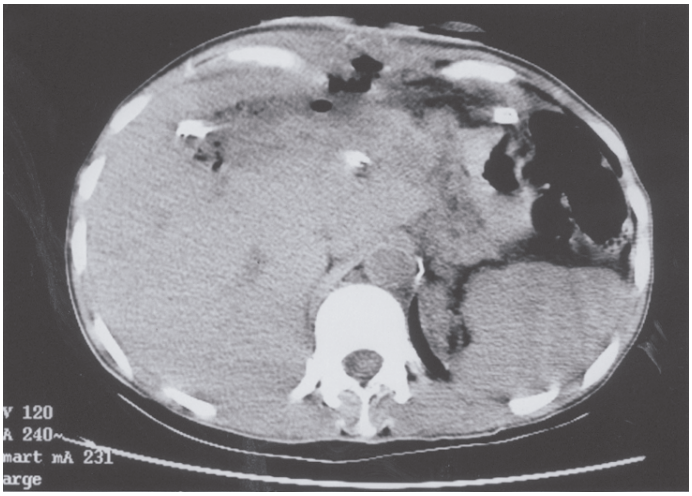

Fig. 4 Post-operative CT image of the liver taken two months after surgery shows that most of the mass was removed and the abdomen has regained its normal dimensions (compared with Fig. 1).

does not respond well to chemotherapy or radiotherapy, and surgery is recommended [2, 6]. The young age of our patient, recurrence 18 years after nephrectomy, clinical symptoms of dyspnoea, and the fact that the progress of extraskeletal chondrosarcoma is unpredictable favoured the option of palliative surgery. Our patient, who was very dyspnoeic at presentation, lived for more than 24 months with symptomatic relief. The fact that the patient had lung metastases preoperatively demonstrates the slow-growing nature of this tumour and reasonable survival in spite of the presence of metastases. This highlights the worthiness of surgical intervention despite large tumour load.

REFERENCES

1. Stout AP, Verner EW. Chondrosarcoma of extraskeletal soft tissues. Cancer 1953; 6:581.
2. Malhotra CM, Doolittle CH, Rodil JV, Vezeridis MP. Mesenchymal chondrosarcoma of the kidney. Cancer 1984; 54:2495-9.
3. Pitfield J, Preston BJ, Smith PG. A calcified renal mass: chondrosarcoma of the kidney. Br J Radiol 1981; 54:262.
4. Nativ O, Horowitz A, Linder A, Many M. Primary chondrosarcoma of the kidney. J Urol 1985; 134:120-1.
5. Ryan JM, Dupuy DE, Pitman M, Boland GW, Hahn PF, Muelle PR. Metastases to the liver from extraskeletal myxoid chondrosarcoma and successful treatment with percutaneous ethanol injection. Clin Radiol 2000; 55:314-7.
6. Nakamura S, Kusuzaki K, Murata H, Takeshita H, Hirata M, Hashiguchi S, et al. Case report of secondary chondrosarcoma showing spontaneous regression after frequent relapses. Anticancer Res 2000; 20:3817-22.