Springer

Asian Pac J Trop Med
2008;1(2):31-33

Case report

Report of an unusual renal mass: Primary renal lymphoma——Difficult procedure for laparoscopic surgery

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Abstract

Lymphomas form a heterogenous group of clonal(neoplastic) diseases. Primary renal lymphoma(PRL) is rare. Diagnosis of primary renal lymphoma is important for the patients to receive appropriate therapy. Laparoscopic nephrectomy should be the standard procedure in most cases of both malignant and benign, renal tumors with the possible exception of tumor >10cm. Probably this case report of laparoscopic surgery of primary renal lymphoma is the first report of this kind and may be useful for the other laparoscopic surgeons. A 53 years-old man with unilateral primary renal lymphoma who had a history of renal colic and ESWL(Extracorporeal Shock Wave Lithotripsy) of the left kidney stone 3 years ago, he underwent laparoscopic radical left nephrectomy and chemotherapy. The patient was monitored for follow up for 4 months and had a significant improvement. Although treatment of lymphoma is now guided by phenotype of tumor, we found that appropriate treatment is possible after radical nephrectomy and assessment of pathology. Renal lesions may compeletly regress by appropriate treatment. There was not any report of laparoscopic surgery of PRL in our literature. We are reporting the first case of successful laparoscopic surgery of PRL successfully.

Keywords: primary renal lymphoma, laparoscopic surgery, nephrectomy, kidney

INTRODUCTION

Lymphomas form a heterogenous group of clonal(neoplastic) diseases that share the single characteristic of arising as the result of a somatic mutation in a lymphocyte progenitor. Any site of the lymphatic system can be the primary site of the origin of the disorders, including lymph nodes, gut-associated lymphatic tissue, skin, or spleen. Any organ, such as the thyroid, lung, bone, brain, or gonads, can be involved either by spreading from lymphatic sites or as a manifestation of primary extra nodal disease[1]. Diffuse malignant lymphoma involves the kidney in 50% of cases and may be detected by radiological imaging or renal biopsy. Primary renal lymphoma(PRL) occurs in all age groups, but it usually affects adults at the average age of 60, has male predominance, is usually unilateral and is not related to the race[2,4,7,8,9]. The mechanism of development of PRL in kidneys is unclear, because the kidneys do not contain lymphatic tissue and most of the few cases are reported to have rapid systemic progression and a poor prognosis[2,3]. Involvement usually occurs late in the course of the disease and is clinically silent[2,4]. Laparoscopic nephrectomy should be the standard procedure in most cases of renal tumors, both malignant and benign, with the possible exception of tumor >10cm.

CASE REPORT

The patient was a 53 year-old man who had a history

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of left flank pain and nephrolithiasis. Sonography reported a 15 mm stone and a 17 mm cyst in the left kidney 3 years ago. Recent sonography reported an 8 mm stone and a 75 × 67 mm cyst with internal echo in the left kidney. CT-scan reported an 80 × 75 × 73 mm isodense and non calcificated mass on the antromedial surface of the left kidney (Figure1). The mass was enhanced and had necrotic centers. Also CT reported a 10 mm stone in the middle calix of the left kidney. In labratory tests, complete blood count (CBC) was normal, and hematuria(10-12/hpf) was reported in urine analysis. Physical examination did not reveal any peripheral lymphadenopathy or hepatosplenomegaly. The patient with the diagnosis of renal tumor underwent laparoscopic radical nephrectomy. Pathology reported a B cell lymphoma with positive CD20 was and negative CD3, CD45RO (Figure2). Perirenal fatty tissue was involved by the tumor. Dense adhesions were encountered around the kidney in our case especially at the hillus of the spleen and near the pancreas. Although we did not notice the injury to the pancreas during surgery, the patient returned 1week later with pancreatic fistula that responded to conservative therapy and abscess drainage. The result of bone marrow biopsy of our patient was normal.

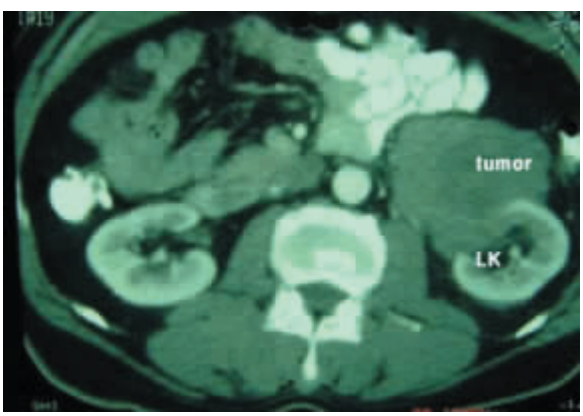

Figure 1. CT scanning of primary renal lymphoma of the left kidney in our patient

DISCUSSION

Although there are no clearly defined diagnostic criteria for renal lymphomas, abdominal and thoracic computed tomography as well as renal and bone marrow biopsy are recommended[2,3]. Although it seems that the tumor in our patient was originated from the sinus of the kidney and grew toward the pedicle of the spleen and inside the abdomen, we could not diagnose it certainly. Hematogenous dissemination of lymphoma to the kidney is the most common way and it is thought that it occurs in 90% of cases[5]. The most common primary renal lymphoma is diffuse large B cell lymphoma[2,4,6,8]. Recognition of primary renal lymphoma is important so that patients receive appropriate therapy[2,3,8]. In our patient tumor appeared extended beyond the renal capsule, so it seemed that radical nephrectomy would be more difficult. Positive immunohistochemical strains for leukocyte common antigen and CD20 confirmed the diagnosis in this case as diffuse large B cell, nonhodgkin's lymphoma. A key antigen for the diagnosis of diffuse large B cell lymphoma is CD20, which is expressed on the surface of B cells[8]. Also, pathology of our case showed B cell lymphoma and CD20 was positive and CD3 and CD45RO were negative. Nonuniform growth can result in single or conglomerate masses that extend beyond the renal contour and displace the collecting system; thus, when there is a single mass, it can resemble primary renal neoplasms. In PRL masses typically range in size is from 1 to 3 cm[2,4]. Also, in our patient the mass was unilateral and its size was 80 × 75 × 73 mm. In PRL, survival is extremely poor, 75% of patients die in less than 1 year[2,4]. If diagnosed early, cure is possible, and multimodal treatment should be considered[2,3,8]. With appropriate treatment, renal lesions may compeletly regress[2]. If lymphoma is confirmed, the kidney should be spared, and complete staging of the neoplasms should be performed to preclude the need for a secondry procedure. Nephrectomy is seldom indicated except in patients with severe

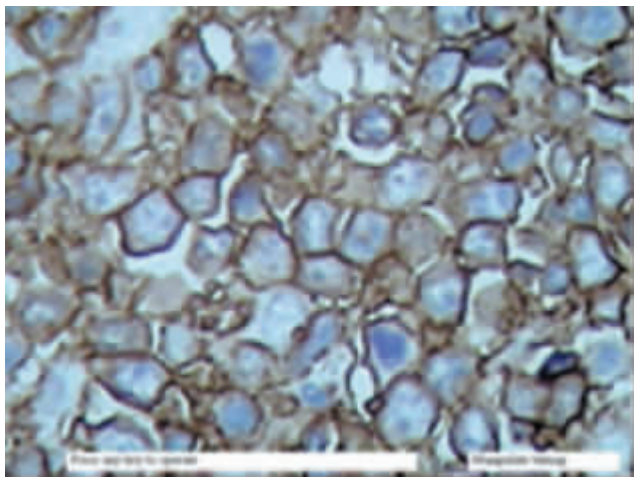

Figure 2. Pathology of primary renal lymphoma in our patient. CD20 was positive.

symptoms, such as uncontrolable hemorrhage. The other notable exception is the extremely rare patient with primary renal lymphoma in whom a combination of nephrectomy and systemic chemotherapy may represent optimal therapy[5]. Also, in our patient nephrectomy and chemotherapy were done for optimal improvement. Tumor adhesion in renal lymphoma is 5% and the surgery of it needs more attention because of these adhesions[5]. CT scanning is the diagnostic modality of choice in patients with suspected renal masses and the diagnosis is proved with the pathology[2,4,5]. Our patient underwent transpritoneal laparoscopic radical nephrectomy. We found sever adhesions especially at the hillus of the spleen and near the pancreas. He returned with pancreatic fistula 1 week later and it responded to conservative therapy and abscess drainage. Our patient was followed up 5 months later. He is currently clinically free of disease after a follow up of 5 months since completion of therapy.

CONCLUSION

Although treatment of lymphoma is now guided by phenotype of tumor, we found out that appropriate treatment is possible after radical nephrectomy and assessment of pathology. With appropriate treatment, renal lesions may compeletly regress. There was not any report of laparoscopic surgery of PRL in literature. We have reported the first case of successful laparoscopic surgery of PRL.

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