Case Report
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Renal Cell Carcinoma Concomitant with Lumbar Radiculopathy in a 75-Year-Old Woman Presenting with Low Back Pain

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Abstract

Renal cell carcinoma (RCC) is the most common primary malignancy of the kidney. Here, we reported a 75-year-old female patient who was admitted to the hospital with chronic low back pain radiating to both legs with numbness. Lumbar magnetic resonance imaging reported left paracentral disc protrusion at the level of L1-2, left paracentral foraminal disc protrusion at the level of L4-5, and diffuse annular bulging at the levels of L3-4 and L5-S1 with bilateral narrowing of the neural foramina, we applied physical therapy with a diagnosis of lumbar radiculopathy. During her follow up, renal ultrasonography (US) was performed because of slightly high persisting creatinine levels. Renal US reported a renal mass that includes necrotic regions. Finally, she was diagnosed with non-metastatic RCC. Her pain substantially disappeared after she underwent radical nephrectomy.

Keywords: Renal cell carcinoma, low back pain, radiculopathy, physical therapy

Introduction

Renal cell carcinoma (RCC) is the most common primary malignancy of the kidney. It is relatively rare and accounts for only 3% of adult malignancies (1). It is two times more common in men than in women (2). Common metastasis sites are the adrenal gland, liver, colon, pancreas, lung, bone, and regional lymphatic nodes. Metastasis rarely occurs in regions of the central nervous system, such as cauda equina (3). In this unusual condition, patients likely have low back pain and radicular symptoms of L4-5. However, we herein report a patient presenting with chronic low back pain and radicular symptoms of L4-5 who was subsequently diagnosed with non-metastatic RCC concomitant with lumbar radiculopathy.

Case Report

A 75-year-old woman was admitted to our outpatient clinic with a 3-year history of low back pain radiating to both legs. Her pain worsened with movements and did not improve with rest. She also complained about pain at nights and tingling and numbness on her legs. She did not mention about weight loss, fatigue, poor appetite, or fever at nights. The laboratory findings were as follows: hemoglobin, 14 g/dL (13.6–17.2 g/dL);

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white blood cell count, 6.000/µl (5200–12400/µl); erythrocyte sedimentation rate, 45 mm/h; C-reactive protein, 5.1 mg/L (0–3 mg/L); serum urea, 60 mg/L (10–40 mg/L); and creatinine, 1.38 mg/dL (0.66–1.09 mg/dL). Urinalysis demonstrated no pathology, except microscopic hematuria. During the physical examination, movements of the lumbar spine were painful in all directions, and the femoral stretch test was positive in both lower limbs. Neurological examinations revealed no pathology. Lumbar magnetic resonance imaging (MRI) reported left paracentral disc protrusion at the level of L1-2, left paracentral foraminal disc protrusion at the level of L4-5, and diffuse annular bulging at the levels of L3-4 and L5-S1 with bilateral narrowing of the neural foramina. Hotpack (Medsis A.O.S.B. 10040 Çiğli, İzmir) and transcutaneous electrical nerve stimulation (Endomed 682, Enraf Nonius, B.V.P.O. Box 120803004 GB Rotterdam, The Nederland, 2012-CE 0197) were performed for 20 min/day. Therapeutic ultrasound (1.5 watt/cm^2) (Enraf Nonius, Sonopuls 490 u B.V.P.O. Box 120803004 GB Rotterdam, The Nederland, 2012 CE 0197) was used for 6 min/day along the paravertebral region. In addition, paraspinal and abdominal strengthening exercise programs were added to the physical therapy program with the diagnosis of lumbar radiculopathy. After 14 sessions, because her pain and numbness could not be alleviated, we decided to administer pregabalin 2 × 75 mg/day and increased the dose to 2 × 150 mg/day without any other medication for her chronic low back pain radiating to her legs. Renal ultrasonography (US) was performed because slightly high persisting creatinine levels and microscopic hematuria were observed during her follow up. Renal US reported a renal mass with a size of 22 × 18 mm and 17 × 11 mm that includes necrotic regions. Abdominal computed tomography (CT) revealed a right renal tumor with a size of 27 × 20 mm (Figure 1). Urine cytological analysis was reported to be benign. Renal MRI and MRI urography reported a renal mass, including hemorrhagic and necrotic regions in the right renal pelvis and inferior pole. After right radical nephrectomy, the patient's pain was substantially relieved. Written informed consent was obtained from the patient.

Figure 1. CT shows the right renal mass with the necrotic region indicated by an arrow
CT: computed tomography

Discussion

The frequent symptoms of RCC include flank pain, hematuria, and palpable abdominal mass. Actually, only few patients present with this triad of clinical symptoms. Approximately half of RCC cases are detected incidentally on imaging methods such as US, CT, or MRI (4,5). In our patient, there was no flank pain, palpable abdominal mass, or hematuria on admission. However, she had both mechanical and inflammatory chronic low back pain, with numbness on both legs. There was no sign of malignancy; therefore, we applied a physical therapy program for radiculopathy. After 14 sessions of the physical therapy program, her pain persisted. It was previously reported in the literature that pregabalin may be a treatment option in the management of chronic low back pain (6). Therefore, we administered pregabalin for her chronic low back pain due to lumbar radiculopathy, and we planned to perform abdominal US because of slightly high persisting creatinine levels and microscopic hematuria. After ultrasonographic assessment, we noticed a renal mass, and she underwent radical nephrectomy.

In many papers, it has been reported that radicular pain in RCC patients is caused by metastases to the vertebral bone (7,8) or cauda equina (3,9). Also, a few authors reported chronic low back pain as a missed sign for RCC (10). In our patient, there was no metastasis; however, she had both mechanical and inflammatory chronic low back pain, and the pain substantially disappeared following nephrectomy.

Low back pain is a frequent complaint mostly indicating a benign disease; however, it should be kept in mind that some serious malignant diseases such as RCC may also cause low back pain with or without radicular pain by itself or its metastases (7,9,10). As in our case, low back pain that does not alleviate with rest and physical therapy and sometimes keeps patients awake at nights may be an indicative sign of a probable concomitant inflammatory disease or malignancy.

Conclusion

In daily practice, low back pain is a relatively frequent complaint which physical medicine and rehabilitation specialists encounter. Additionally, it is also known that early diagnosis contributes significantly to the 5-year survival rate among patients with RCC (4). Although the patient has lumbar radiculopathy, which is inconsistent with physical examination, a rare cause of low back pain, RCC, must also be kept in mind, particularly in chronic cases and in elderly patients as an additional or a concurrent reason.

Informed Consent: Written and verbal informed consent was obtained from patient who participated in this case.

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