

8-year survival in a patient with several recurrences of renal cell carcinoma after radical nephrectomy

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KEY WORDS

renal cell carcinoma ▶ metastases ▶ survival

ABSTRACT

We describe the case of a patient with a large renal cell carcinoma (RCC) who underwent cytoreductive nephrectomy utilizing liver mobilization techniques similar to those used in transplantation. Despite recurrent metastases, our patient continues to survive eight years later with several metastasectomies and adjuvant chemotherapy.

We report the case of a 48-year-old Hispanic American man who presented with a 4-month history of an enlarging right upper quadrant abdominal mass and hematuria. Computerized tomography revealed a 13 x 14 x 14 centimeter mass suspicious of RCC with possible metastasis to the lungs. The patient subsequently underwent radical nephrectomy. Pathological analysis confirmed the mass as RCC. Over the following eight years, the patient developed metastases to the pulmonary lobes, buccal mucosa, thoracic spine, and second rib, which were all treated with metastasectomy. The patient continues to survive today with a reasonable quality of life.

Palliative measures in patients with large RCC tumors with distant metastases require persistent, aggressive therapeutic modalities.

however new immunotherapy and chemotherapy agents are currently being investigated.

By combining nephrectomy, metastasectomy, and some forms of adjuvant therapy, we may be able to offer patients an approach that can prolong survival with a reasonable quality of life, as evidenced by our case report.

CASE PRESENTATION

We report the case of a 48-year-old Hispanic male with a 30 pack-year history of smoking. The patient, who had no prior surgical or medical morbidities, presented with a right upper quadrant abdominal mass and hematuria. The patient denied having previous episodes of hematuria. Computerized tomography (CT) of the abdomen revealed a 14 x 14 cm mass arising from the inferior pole of the right kidney compressing and possibly invading the renal vein and inferior vena cava. Metastatic investigations were negative except for multiple 2-3 mm calcified nodules in the right lower lobe of the lung.

The patient elected to undergo radical nephrectomy using a liver mobilization technique based on orthotopic liver transplantation procedures. Liver mobilization minimizes the risk of massive hemorrhage by providing maximal exposure of the right upper quadrant and enabling safe vascular control [9, 10]. The renal mass was noted invading the second part of the duodenum, which was also resected. The pathological exam showed grade III 12 cm RCC with granular and clear cell features with necrosis. The patient subsequently underwent immunotherapy with thalidomide and was subjected to close monitoring of the pulmonary nodules. The basal right lung nodules continued to grow in size and, as a result, the patient underwent a right thoracotomy and lower lobe wedge resection 18 months following CRN. The pathology was consistent with clear cell RCC.

From 2003 to 2006, the patient was receiving daily chemotherapy in the form of thalidomide. In 2006, the patient was noted to have increased lymphadenopathy in the right lung and was placed on sorafenib. In October of 2008, the patient noted the presence of an enlarging mass in his right cheek. On examination, the patient had a 2 x 2 cm pedunculated mass on the right buccal mucosa. An incisional biopsy identified this mass as RCC and it was subsequently excised. As such, the patient was placed on sunitinib therapy until September 2009. Simultaneously, a CT scan had shown a lytic lesion of the right posterolateral second rib. Repeat PET scan showed foci of hypermetabolic activity in the oropharynx, base of the right lung, several areas of the liver, and the right second rib. In September of 2009, CT revealed that the lytic lesion was enlarging. The patient was then placed on temsirolimus therapy. In June of 2010, the temsirolimus therapy was discontinued secondary to a foot infection. In August of 2010, the tumor had reached a size of 81 x 38 mm with no lung involvement. At this point, the patient underwent tumor debulking with right-sided chest wall resection of the second and third ribs. In November, the patient began chemotherapy with pazopanib given the diffuse spread of the tumor.

INTRODUCTION

Renal cell carcinoma (RCC) is the seventh and eighth most common cancer in men and women respectively [1]. It is responsible for 2 to 3% of all malignant cancers in adults. The annual incidence is approximately 58,240 [1]. Although prevalent utilization of cross-sectional imaging allowed early detection of asymptomatic renal tumors, a significant number of patients present with large and metastatic RCC. The prognosis of metastatic RCC is poor, and most patients die within a year of being diagnosed with metastatic disease [2].

Cytoreductive nephrectomy (CRN) in patients with advanced RCC is well-recognized for its benefits in palliation and prolonging survival. Over the years, various techniques have been described for extirpating tumors of increased size or extensive involvement [3, 4]. In addition, complete metastasectomy has been shown to offer a chance of cure to some patients and even incomplete metastasectomy improves survival in others [5, 6]. There are no acceptable curative options through medical therapy alone. For adjuvant therapy, only an autologous renal tumor cell vaccine has proven to be beneficial in a randomized phase III trial [7]. Many studies have been conducted using immunotherapy agents, but most fail to show a benefit in overall survival or disease free survival [8],

In December of 2010, the patient presented with increasing upper back pain over the previous 6 weeks. Magnetic Resonance Imaging (MRI) of the thoracic spine revealed bony metastatic disease involving the T3, T4, and T5 thoracic vertebral bodies with pathological fracture of the T4 vertebra and epidural extension causing cord compression and abnormal signal within the spinal cord spanning the T2 through T4 levels. As a result, the patient underwent T3 – T4 laminectomy, transpedicular decompression, and a T1 through T7 posterolateral pedicle fixation. Surgical pathology revealed the tumor to be a metastatic, poorly differentiated carcinoma with spindle cell features in dense fibroconnective tissue with the tumor cells being positive for CD1 and EMA, and negative for CK7 and RCA, an immunophenotype most consistent with a metastatic renal cell carcinoma. The patient was also started on radiotherapy and the pazopanib therapy was suspended. The patient developed odynophagia and dysphagia secondary to radiotherapy. Upper gastrointestinal endoscopy revealed diffuse esophagitis. The patient has since finished radiotherapy and has been restarted on pazopanib. The patient is currently able to work fulltime and is followed by the oncology service on an outpatient basis.

DISCUSSION

RCC was responsible for approximately 13,040 deaths in 2010 [1]. It is believed that 30% of patients present with metastasis at the time of diagnosis [11]. Of patients presenting with only localized disease, another 20-40% of them will present with metastasis after partial or radical nephrectomy [12]. As with all cancers, the presence of metastasis confers a poor prognosis, with a 5-year survival of metastatic RCC of less than 10% [11].

Treatment of metastatic RCC is challenging because of resistance to currently available chemotherapy regimens. Only complete surgical resection of metastases offers any possibility of definitive therapy in patients. Currently, the 5-year survival rate of these patients after metastasectomy is between 30 and 45% [13, 14, 15]. Also, the risk of death is reduced by more than half with complete resection of all metastases [5].

Most of our information comes from patients who have had a solitary metastasis or metastases to the lung; however, patients who present with multiple metastases, synchronously or metachronously, can also benefit from metastasectomy [5, 13, 14, 15, 16]. Alt et al. showed that patients with complete metastasectomy were associated with a significant prolongation of median cancer specific survival (CSS) (4.8 years vs. 1.3 years; $P < 0.001$) [16]. The 5-year CSS was also increased in patients with multiple, nonlung-only metastases who had undergone complete metastasectomy, 32.5% versus 12.4% [15]. Even patients who had metachronous multiple metastases had improved 5-year CSS with complete resection [16]. A case has been documented in the literature of a RCC patient living 11 years after multiple metastasectomy [17].

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