We present a case of solitary contralateral metachronous adrenal metastasis five years after radical nephrectomy. The patient underwent laparoscopic adrenalectomy for primary renal cell carcinoma of the kidney for renal cell carcinoma. The patient was then treated with steroid replacement. The patient was in remission for six years until death from unrelated cardiovascular collapse. Subsequently, the patient was found to have metachronous contralateral adrenal metastasis from the initial renal cell carcinoma. Metachronous renal cell carcinomas are rare, but can be treated and cured aggressively with surgery when detected early on in its progression. Our aim is to raise awareness of this occurrence and further support literature of this condition.
1. INTRODUCTION

At the time of surgery for renal cell carcinoma, up to 25-30% of the patients may already have metastasis (Fuselier et al, 1983; Hadju and Thomas, 1967; Middleton, 1967; Rafia, 1970; Kessler et al, 1998). The most common sites of metastasis are lung, lymph nodes, liver, contralateral kidney and bone (Bennington and Beckwith, 1983; Winter et al, 1990). 4-10% of these will be to the ipsilateral adrenal (Robey and Schellhammer, 1986; Sagalowsky et al, 1994; Mesurolle et al, 1997). Less than 1% will involve the contralateral adrenal (Kessler et al, 1998). We present a case involving a patient who underwent a right radical nephrectomy with ipsilateral adrenalectomy and presented with a contralateral adrenal metastasis five years later.

2. CASE REPORT

A 75 year-old male presented with gross hematuria for two weeks. The patient had a CAT scan that identified a 4.5 cm inferiomedial right renal tumor with no evidence of local or distant metastases. Subsequently, the patient underwent a transabdominal right radical nephrectomy with an ipsilateral adrenalectomy. Pathology revealed a grade two renal cell carcinoma that was confined to the capsule, with no perinephric fat, renal vein or pelvis involvement and no evidence of ipsilateral adrenal involvement. The patient was followed with serial CAT scans for two years, chest x rays and liver function studies periodically for four years. Follow up CAT scan was performed on the fifth year for workup of a kidney stone revealing a six cm adrenal lesion. A metastatic work up was started with chest x-rays, CAT scans, bone scan as well as a primary adrenal tumor panel. Work up was negative for any primary adrenal tumors or other metastatic lesions other than the adrenal. Percutaneous biopsies of the adrenal mass were performed but were inconclusive. Laparoscopic adrenalectomy was then performed. This revealed metastatic renal cell carcinoma grade two. He was started on steroid replacements and tolerated them well with no complications. The patient was then followed for five years and remained tumor free. He subsequently died on the sixth year of a cardiac event unrelated to the primary carcinoma in origin.

3. DISCUSSION

At the time of radical nephrectomy, the incidence of ipsilateral metastasis is about 4-10%. At autopsy, patients with a history of renal cell carcinoma may have as high as 20% and 10% metastasis for ipsilateral and contralateral tumors respectively (Huisman and Sands, 1991; Hellsten and Linell, 1983).

The risk of ipsilateral tumor spread is highest in tumors that are upper pole and larger than seven centimeters or staged T3 or greater (Sagalowsky et al, 1994; Gill et all, 1994). As a consequence, it has been suggested that routine ipsilateral adrenalectomy be considered for lesions greater than four centimeters (Von Knowlish et al, 2000; Antonelli et al 2006). The contralateral lesions that present clinically represent less than 1% of the metastases (Hellsten and Linell 1994). Left sided contralateral metastasis are seen more frequently than right sided (Ito et al, 2002). This may be due to left adrenal vein drainage into the left renal vein (Huisman and Sands, 1991; Huisman and Sands, 1991). It has been reported that 71% of the patients with contralateral adrenal lesions had ipsilateral lesions prior to or concomitantly (Von Knoblish, 2000). The use of noninvasive modalities such as cat scanners and MRIs has made it more efficient to pick up metastatic contralateral lesions. These modalities, which are used more freely for general work ups for numerous problems, pick up these incidentalomas. These incidentalomas usually present as solitary lesions with no elevation of adrenocortical hormones. The radiological finding from CAT scans or MRI usually show a more vascular tumor compared to the more hypo vascular adrenal adenoma or carcinoma. Biopsy or fine needle aspirations may show the identity of the lesion but may be inadequate to secure diagnosis. Surgical excision is usually needed for the diagnosis and therapy (Dechet et al, 2003; Lau et al, 2003).

A review of the literature has reported contralateral adrenal metastases up to twenty-eight years later (Huisman and Sands, 1991; Lemmers et al 1989; Bloom et al 1981). Overall, the five year survival for metastatic renal cell carcinoma is better for those that present with metastases greater than eighteen months after nephrectomy (Turini et al, 1988). Why this group of patients that survive longer is unclear. The immune mechanisms that may be activated by the debulking may inhibit and regulate microscopic disease. There may be a group of patients with a slow growing cancer that is not very aggressive and present later. Patients with limited or solitary metastasis that undergo resection may have prolonged survival, some greater than five years (Stein et al, 1997). Excision of the localized adrenal metastasis may offer the patient the better chance of survival. This is better that the 5% 5-year survival with diffuse metastatic disease. Kessler et al noted that patients diagnosed with adrenal metastases greater than eighteen months after nephrectomy had a prognosis that was better than those with a shorter interval to diagnosis (Kessler et al, 1998). The use of chemotherapy, hormonal agents and radiotherapy has failed to improve long-term survival. The current use of conventional immunotherapy has not improved the 5-year survival. Removal of the remaining adrenal gland may pose a problem to the elderly.
more than the younger patients with postoperative adrenal insufficiency and long-term adrenal replacement therapy compliance (O’Roiradain et al, 1994). With the wide spread use of laparoscopic cytoreductive therapy, the benefits of surgery may improve survival and decrease morbidity (Elashry et al, 1997).

4. CONCLUSION
This report presents a case of late metastasis of renal cell carcinoma that was incidentally found. It is to raise attention that this is a rare occurrence that should gain further awareness. When identified, cure rates are high. We do not propose change to current protocol guidelines, but rather an awareness of occurrence and further support literature.

SUMMARY OF RESEARCH
This report aims to support the literature for appearance of renal cell carcinoma post-surgically.

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