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## Case Report

### Isolated scar-site metastasis after radical nephrectomy for localized renal Cell carcinoma

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## ABSTRACT

The incidence of tumor seedling and scar-site metastases following conventional radical nephrectomies ranges from 0.9% to 1.8% which is comparable to port-site metastases after laparoscopic nephrectomies. Here we report a case of scar-site metastasis, following an open radical nephrectomy in a 36 years old male with a stage pT2N0M0 and Fuhrman grade II renal cell carcinoma. (Rawal Med J 2012;37:58-60).

## Key words

Renal cell carcinoma, nephrectomy, scar recurrence

## INTRODUCTION

The incidence of renal cell carcinoma (RCC) has progressively increased in last 20 years due to widespread use of modern imaging.<sup>1</sup> About 30-50% of patients are found to have metastases at diagnosis. While bone, lymph nodes, lungs and brain constitute expected 'homing' sites, metastasis may occur at unusual locations.<sup>2,3</sup> The nephrectomy scar is very rare site of metastasis and only a few case reports have been published.<sup>4</sup> Scar-site metastases following open nephrectomy are early recurrent metastatic lesions, which develop locally in the abdominal wall

within the scar tissue with or without involvement of underlying viscera.<sup>5</sup> Though rare complication, the incidence of tumor seedling and scar-site metastases following conventional radical nephrectomies ranges from 0.9% to 1.8% which is comparable to port-site metastases after laparoscopic nephrectomies.<sup>6</sup> In this case report, a rare case of scar-site metastasis following an open radical nephrectomy is described.

### **CASE PRESENTATION**

A 36 years old man presented with five months history of gross hematuria and abdominal palpable mass. On general physical examination, he was malnourished and abdominal examination was unremarkable. Baseline investigation including full blood count, urea and electrolytes, liver function tests and chest X-ray were normal.

**Fig.1. Abdominal CT scan showing an approximately 5 x 3.5 x 4 cm sized solid mass in the lower pole of the right kidney.**



Abdominal CT scan with intravenous contrast demonstrated an approximately 5 x 3.5 x 4 cm size solid mass in the lower pole of the right kidney (Fig 1). Further staging work up showed a

negative CT chest and bone scan. A radical right nephroureterectomy with cuff of bladder resection through right Gibson's incision was performed. Final pathologic finding of mass was consistent with papillary cell type renal cell carcinoma. Tumor was not infiltrating through the capsule and hilar vessels, margins and bladder cuff were free of tumor. Stage was made pT2N0M0.

**Fig 2. Hard fixed palpable superficial mass just at scar-site.**



Seven years after the nephrectomy, patient presented with right abdominal mass at scar-site. On physical examination, there was hard fixed palpable superficial mass just at scar-site (Fig 2). The rest of examination was normal. Fine needle aspiration cytology (FNAC) was consistent with metastatic renal cell carcinoma. CT chest and bone scan were negative for metastases. He received radical radiotherapy (total dose 6000 cGy in 30 fractions) to gross tumor followed by resection of the isolated scar-site tumor. Patient was alive at his last follow up. Formal written consent was taken from patient for this publication.

## DISCUSSION

In Pakistan as well as in developing countries, for localized RCC, conventional transperitoneal nephrectomy is widely practiced.<sup>7</sup> In recent years, with the widespread use of laparoscopic nephrectomies to treat RCC, questions have been raised about the oncologic safety of this surgical approach with special concern on local and port-site metastasis.<sup>8</sup> However, studies have shown no significant difference of scar-site metastases (0.9–1.8%) in two methods.<sup>9</sup>

Scar-site or port-site metastasis following conventional and laparoscopic radical nephrectomy is very rare. A significant contributor to the delayed diagnosis is poor patient recall of the primary surgery, because a considerable time may elapse before metastases appear.<sup>10</sup> Our patient was lost to follow up after his first surgery for primary tumor. The mechanism of the long dormancy of RCC (7 years in our patient from time of nephrectomy to appearance of scar-site metastasis) is particularly interesting.<sup>11</sup> Multifactorial pathogenesis including natural tumor behavior, local wound factor, immune and stress response, and additional laparoscopic factors for port-site metastases has been suggested.<sup>12</sup>

Tumor cell dissemination was noted in 91% of all cases of patients who underwent open visceral surgery and vital tumor cells were found in blood taken from the wound site.<sup>13</sup> Tumor cell concentration varied from 10-10,000 and 60-75% of them were viable and 62% were capable of mitosis.<sup>13</sup> The risk factors for tumor cell dissemination could be the improper surgical technique (disruption of renal capsule) or manipulation during the surgery. Though RCC is considered radioresistant, we offered radiotherapy to our patient prior to resection to minimize the need of surgical flap and for better cosmesis. In summary, we believe that only proper preoperative assessment, along with careful handling during the surgery can reduce the scar-site metastases.

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