Solitary Colonic Metastasis from Renal Cell Carcinoma After 19 Years of Nephrectomy: A Case Report

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Metastasis from renal cell carcinoma (RCC) even after curative resection is common and said to be around 10% after 5 years. Although it frequently involves lung, liver, brain and bones, metastasis to colon is very rare. We present a case of 57 years old lady, who underwent right radical nephrectomy for renal cell carcinoma 19 years back in our hospital. She now presented with epigastric mass which was evaluated and suspected to be gastrointestinal stromal tumor (GIST). However, histopathology confirmed it to be renal cell carcinoma metastasizing to transverse colon.

Keywords: clear cell carcinoma, colon metastasis, late recurrence, renal cell carcinoma, solitary metastasis.

Metastasis from renal cell carcinoma (RCC) even after curative resection is common and said to be around 10% after 5 years.[1] Although it frequently involves lung, liver, brain and bones, metastasis to colon is rare,[1] with fewer than 10 cases being reported in world literature according to Elaine Vo et al.[2] We present such a case with solitary colonic metastasis after 19 years of curative nephrectomy done for T1a renal cell carcinoma.

Case Report

A 57-year-old old lady presented to surgical out-patient department with complaints of

vague upper abdominal pain, moderate in intensity which was associated with vomiting, anorexia and weight loss. She had history of right open nephrectomy done in the past. Clinically she had a diffuse mass over the epigastrium which was non-tender, bowel sound was present.

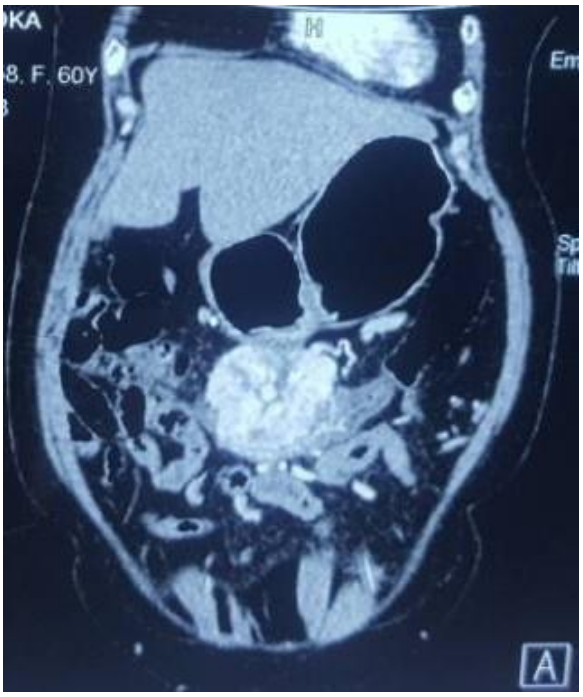

Figure 1: CECT abdomen, coronal section showing highly vascular, soft tissue density lesion in epigastrium with necrosis within

Patient was advised for contrast enhanced computed tomography (CECT) abdomen which revealed highly vascular, soft tissue density lesion about 7.7 x 7.6 x 6.3 cm size in epigastrium with necrosis within and abutting the stomach superiorly and transverse colon inferiorly **(Figure 1)**. These features were radiologically suggestive of either gastrointestinal stromal tumor (GIST), carcinoma of transverse colon or metastasis **(Figure 2)**. Carcinoembryonic antigen (CEA) sent at that time was 10.5 ng/mL (Normal <10 ng/mL). All hematological and biochemical investigations including liver function tests and renal function tests were within normal limit.

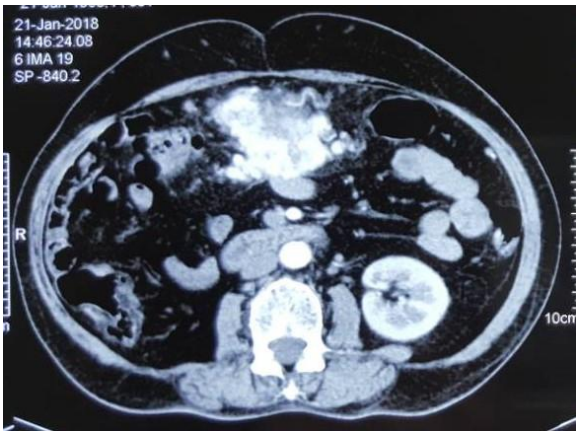

Figure 2: CECT Abdomen, transverse section suggestive of either GIST, carcinoma of transverse colon or metastasis

With the provisional diagnosis of GIST in mind, the patient was prepared for surgery and right extended hemicolectomy with wedge excision of stomach was done. Intraoperatively, yellowish colored tumor about 7 x 6 x 6 cm in size was found arising from the transverse colon diffusely involving the transverse colonic wall. There were no features of peritoneal seedling or metastasis to other organs. Intraoperative and postoperative period were uneventful and patient was discharged on normal oral diet on 7^{th} postoperative day.

The specimen was sent for histopathological examination to our pathology department. On gross examination, the tumor caused narrowing of the lumen and a mucosal bulge. Cut surface of tumor appeared irregular and grayish to yellowish in color **(Figure 3)**.

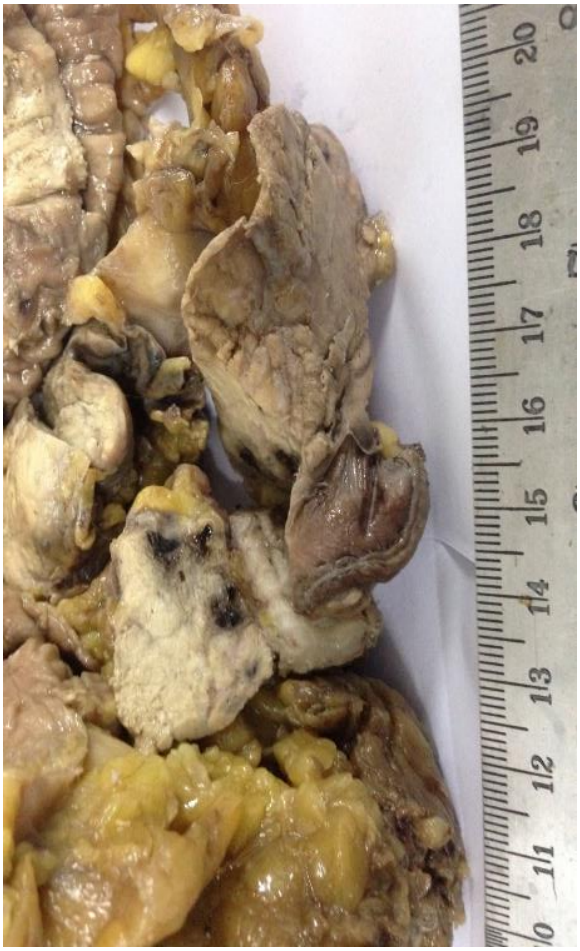

Figure 3: Macroscopic picture of the mass showing surface of the tumor irregular and grayish to yellowish in color

Tumor infiltration was noted from mucosa up to subserosa. Microscopic examination showed ulcerative surface, tumor in sheets, tubular formations and lobules, separated by thin fibrous septae and was well vascularized. Individual cell appeared polyhedral with well-defined cytoplasmic outlines and small to medium sized small pleomorphic round nuclei. There was abundant clear cytoplasm, low mitotic activity and evidence of areas of mild myxoid change **(Figure 4)**. Immunohistochemistry showed positive stain for CK, Vimentin, CD 10 and negativefor CK 7, CK 20, CD 117, DOG 1, CEA, Calretinin. All the features directed to the diagnosis of clear cell carcinoma.

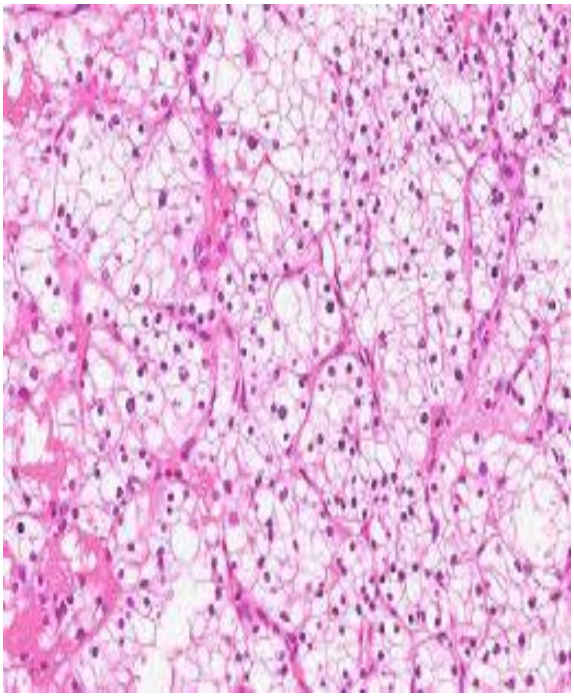

Figure 4: Microscopic Histological picture showing tumor in sheets, tubular formations and lobules separated by thin fibrous septae

Retrospectively, history was revealed that the patient had undergone right open radical nephrectomy for renal cell carcinoma 19 years back. The histopathology during that time was clear cell carcinoma of size 3 x 2 cm with negative margins and pelvis was not involved.

Discussion

The gastrointestinal tract, particularly colon, represents a very uncommon site of late metastatic disease. Hiroshi Saitoh in 1981 reported 1451 cases of autopsy in patients with renal cell carcinoma but did not find any case of solitary colonic metastasis.[3] Ruiz JL

et al. reported two cases of late recurrence of RCC in 1991, one of which was solitary metastasis to colon after 11 years.[4] Similarly, Thomason PA et al. found solitary colonic recurrence as late as 17 years after nephrectomy.[5] Tokonabe S et al. and Valdespino-Castillo VE et al. both reported patients with solitary colonic metastasis after 7 and 8 years of nephrectomy respectively.[6,7] Both of these cases presented with lower gastrointestinal tract bleeding and abdominal mass.

The cause of late recurrence is still not clearly elucidated but is a common behavior of RCC. Such metastasis are said to be more associated with lower histological grade (grade ≤ 2) and primary tumor less than T2 stage.[8] In multivariate logistic regression analysis done by Fujii Y et al., they found that symptoms at diagnosis, pathological stage T2 or greater, lymphovascular invasion and histological grade 3 disease were independent predictive factors for early recurrence whereas age at surgery and <pT2 stage were significantly correlated with late recurrence.[1] In our case, the primary tumor was only stage T1a and R0 resection had been achieved as evidenced by negative margins at histopathology. However, we have no information about the histological grade or whether any tumor spillage occurred during the primary surgery. Overall, if any patient with solitary metastasis after a long disease free interval can undergo curative resection, that patient will have a good opportunity for long term survival.[8]

Follow-up schedule of a patient after nephrectomy has been defined by American Urological Association (AUA) and National Comprehensive Cancer Network (NCCN) guidelines for until 5 years only.[9] Due to lack of study regarding follow-up after 5 years, this decision is solely at physicians' discretion. European Association of Urology (EAU) guideline on renal cell carcinoma recommends follow-up 2 yearly with CECT abdomen after 3 years of nephrectomy.[10] The EAU guideline is based upon the University of California Los Angeles integrated staging system (UISS) risk stratification, which incorporates the TNM staging, a person's overall health and the Fuhrman grade of the tumor. However, physician should individualize and judge clinically. Patients with any suspicion of mass and prior history of nephrectomy for renal tumor should be investigated to rule out recurrence and increase the chance of overall survival.

Conclusion

RCC is notorious for metastasizing after long periods of dormancy and colon is a very rare site for such solitary metastasis. A careful history can give us important clues regarding occurrence of late metastasis. If we encounter tumor in any patient with prior history of nephrectomy for RCC, the possibility of recurrence should always be considered. Lifelong follow-up is necessary.

Conflict of Interest

None

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