

# Synchronous Primary Malignancies of the Kidney and Colon: A Rare Case

Mazaher Ramezani<sup>1</sup>, Setareh Afzali<sup>2</sup>, Masoud Sadeghi<sup>3,\*</sup>

<sup>1</sup>Molecular Pathology Research Center, Emam Reza Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>2</sup>Students Research Committee, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>3</sup>Medical Biology Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran

\*Corresponding author: sadeghi\_mbrc@yahoo.com

**Abstract** The coexistent diagnosis of colorectal cancer and renal cell carcinoma is rare. We reported a 55-year-old woman with history of recurrent UTI, who was admitted to Urology Clinic with left flank pain for the evaluation of renal stone. Ultrasound examination revealed a homogenous mass measuring 4.7cm with a calcified focus in left kidney. Macroscopic evaluation revealed a renal mass in lower pole, 5cm in maximum diameter with variegated cut surface. The pathology report showed clear cell carcinoma of kidney. The patient had a colonoscopy report of many polyps in the entire length of colon with a clinical impression of familial adenomatous polyposis since last year but with no genetic confirmatory tests. Since last year, the pathology report showed well differentiated adenocarcinoma of colon invading to submucosa with no vascular and perineural invasion in the distal margin of colon. In family history, her passed brother had colon cancer and her sister was alive with colon cancer that had a colostomy. In summary, the existence of both kidney and colon cancers occurs more in elderly patients. Also, the existence of colon adenocarcinoma with numerous polyps can be a risk factor for the second malignancy that the physicians must pay attention to this point in their follow-up.

**Keywords:** colorectal cancer, renal cell carcinoma, polyp

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## 1. Introduction

Although cancers of the rectum and kidney are common malignancies, but the incidence of coexistent rectal and renal primary tumors is unclear [1]. Renal cell carcinoma (RCC), in particular, is associated with a high rate of multiple primary neoplasms [2]. The coexistent is rare for patients to be diagnosed with both colorectal cancer (CRC) and RCC [3,4]. This coexistent is variously reported with percentages ranging from very rare findings (<0.1%) up to 5% of patients with CRC [5]. The diagnosis of simultaneous tumors is facilitated by the wide spread use of ultrasonography, computed tomography or magnetic resonance imaging techniques. The possibility of coexisting asymptomatic RCC and CRC suggests the need to perform imaging studies when one of the two tumors is diagnosed [6]. We reported synchronous primary malignancies of the kidney and colon in an Iranian patient.

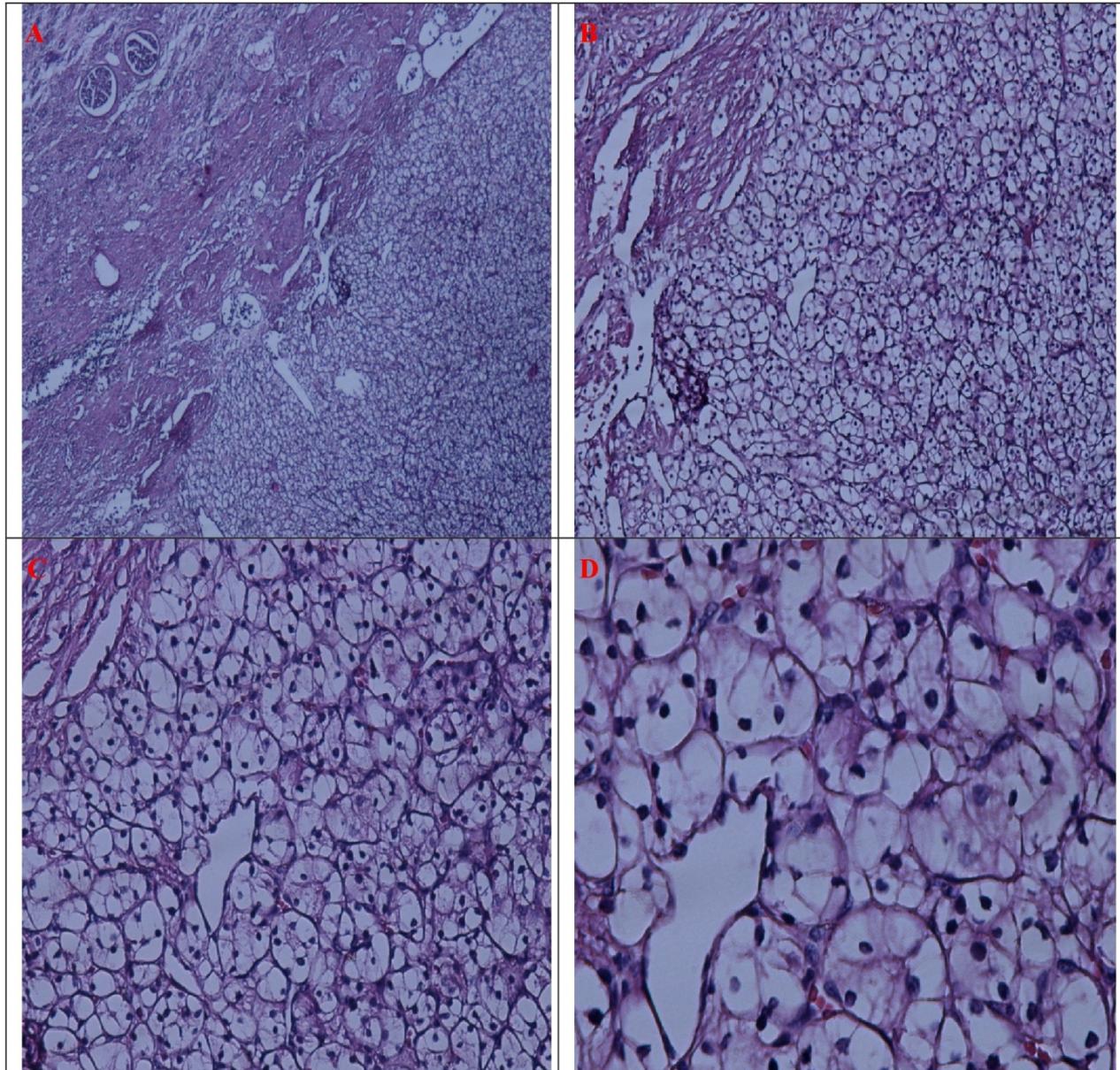
## 2. Case Report

A 55-year-old woman with history of recurrent UTI was admitted to Urology Clinic with left flank pain for the evaluation of renal stone. There was no hematuria. Ultrasound examination on 21<sup>st</sup> February 2016 revealed a homogenous mass measuring 47mm with a calcified focus

in left kidney. The CT-scan on 7<sup>th</sup> March 2016 revealed a solid mass in the antrolateral side of left lower kidney measuring 41\*42mm with obvious enhancement. On 12<sup>th</sup> April 2016, partial nephrectomy was done. Macroscopic evaluation revealed a renal mass in lower pole, 5cm in maximum diameter with variegated cut surface. The diagnosis on frozen section was RCC with 3mm safe margin. Permanent diagnosis was RCC, clear cell type with a Fuhrman nuclear grade of 2/4. Tumor was limited to renal capsule with no vascular invasion (Figure 1). The patient had a colonoscopy report of many polyps in the entire length of colon with a clinical impression of familial adenomatous polyposis (FAP) last year, but with no genetic confirmatory test. On 25<sup>th</sup> April 2015, the pathology report of colonoscopic biopsy was a villous adenomatous polyp with high grade dysplasia suspicious for malignant transformation. On 11<sup>th</sup> May 2015, resection of the colon and terminal ileum was done, gross examination showed segments of colon (74\*2cm), terminal ileum (11\*1cm) and appendix (5\*0.7cm). On opening, the colon showed multiple sessile and pedunculated polyps (more than 50) that the greatest was 2cm. The pathology report showed well differentiated adenocarcinoma of colon invading to submucosa with no vascular and perineural invasion in the distal margin of colon. Other histological findings were numerous adenomatous polyps (more than 50) and one tubulovillous polyp with intramucosal carcinoma. Proximal margin,

appendix, ileum and fifteen lymph nodes showed no tumoral involvement. The patient had a past history of hysterectomy 10 years ago, but the pathology report was not available. In family history, her passed brother had

colon cancer and her sister was alive with colon cancer who had a colostomy. Three daughters and one son of the patient had no problem.



**Figure 1.** Renal cell carcinoma,clear cell type, [H&E Staining, A-X40, B-X100,C-X200, D-X400 magnification]

### 3. Discussion

The concomitant presence of RCC with other primary malignancies including cancers of bladder, prostate, colorectal, lung, malignant melanoma of skin and non-Hodgkin's lymphoma has been reported [7]. Patients with CRC and RCC may be at risk for additional primary malignancies [4]. One study [8], encountered 18 patients during a 6-year period with a urologic cancer and another primary malignancy. Thirteen patients had their second cancer detected during the work-up of their primary urologic tumor. During the 10-year period in another study [1], there were 182 patients presenting for treatment of rectal carcinoma. Of these seven (3.8%) were found to have an asymptomatic RCC. Table 1 shows the

characteristics of patients with both kidney and colon cancers. The existence of both cancers occurs more in elderly patients that is more in men. The site of involvement and type of kidney and colon cancers are different. More cases didn't report tests of genetic and therefore we couldn't find effect of genetic in synchronous incidence of malignancies of kidney and colon.

### 4. Conclusion

The existence of both kidney and colon cancers occurs more in elderly patients. Also, the existence of colon adenocarcinoma with numerous polyps can be a risk factor for the second malignancy that the physicians must pay attention to this point in their follow-up.

**Table 1. The characteristics of patients with both kidney and colon cancers**

Reference	Age	Sex	Tumor size of Kidney (cm)	Type of kidney cancer	Type of colon cancer	Laterality of kidney tumor	Laterality of colon tumor	TNM of colon cancer
[2]	67	Female	5	Clear cell carcinoma	Invasive moderately adenocarcinoma	Right	Bilateral	-
[3]	75	Female	-	Clear cell carcinoma	Undifferentiated carcinoma	Right	Right	-
[6]	79	Female	3	Clear cell carcinoma	Moderately differentiated adenocarcinoma	Left	Bilateral	T1N0
[9]	75	Female	-	Clear cell carcinoma	Adenocarcinoma	Right	Right	-
[9]	64	Male	-	Clear cell carcinoma	Adenocarcinoma	Left	Left	-
[10]	72	Male	4*3.3	Papillary cell carcinoma	Mucinous adenocarcinoma	Left	Right	-
[11]	81	Male		Clear cell carcinoma	Invasive adenocarcinoma	Right	Left	N0
[12]	68	Female	-	-	Adenocarcinoma	Left	Left	M0
[13]	29	Male	2.5	Carcinoma	Signet-ring adenocarcinoma	Right	Left	-
[14]	69	Male	2 and 2.8	Clear cell carcinomas	Adenocarcinoma	Bilateral	Left	-
[15]	63	Male	6*4	Papillary cell carcinoma	Moderately differentiated adenocarcinoma	Left	Left	T4N0
[15]	67	Male	8*7(right) and 3(left)	Cystic renal cell Carcinoma(left) and clear cell carcinoma (right)	Infiltrating adenocarcinoma	Bilateral	Left	T3, T2, T1, Tis
[15]	71	Male	5	Papillary cell carcinoma	Moderated differentiated adenocarcinoma	Left	Left	T3N0
[15]	62	Male	-	Transitional cell carcinoma of the urethra	Infiltrating adenocarcinoma	Right	Right	T2N0
[16]	36	Female	9	Clear cell carcinoma	Moderately differentiated invasive adenocarcinoma	Left	Transverse colon	T1N0M0
The present case	55	Female	5	Clear cell carcinoma	well differentiated adenocarcinoma	Left	Left	-

## Competing Interests

The authors have no conflict of interests to disclose.

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