Int J Clin Exp Med 2019;12(2):2010-2014
www.ijcem.com /ISSN:1940-5901/IJCEM0078527

Case Report

A case of primary renal cell carcinoma with rectal carcinoma

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Received April 25, 2018; Accepted September 6, 2018; Epub February 15, 2019; Published February 28, 2019

Abstract: Multiple primary cancer (MPC), also known as repeated and multiple cancer, is a rare pathological phenomenon. It can be divided into two types. Patients with tumor interval within 6 months are called Synchronous Carcinoma (SC), and more than 6 months are called Metachronous Carcinoma (MC). Here, we report a case of MPC. The abdominal CT showed: a 30 mm * 34 mm round slightly low density shadow on the right kidney and the right wall of the rectum was unevenly thickened. The patient was diagnosed as MPC and treated with radical surgery. This unique case highlights that MPC should be considered if a patient is suspected of having metastatic tumor.

Keywords: Primary renal cell carcinoma, rectal carcinoma, multiple primary cancer

Introduction

Multiple primary cancer (MPC), also known as repeated and multiple cancer, is a rare phenomenon. The rate of MPC diagnosis is increasing owing to advances in diagnosis [1]. In addition, as cancer survival rates and average life expectancy have increased, the incidence rate of MPC has also increased [2]. Patients with a tumor interval within 6 months are called Synchronous Carcinoma (SC), and more than 6 months are called Metachronous Carcinoma (MC) [3]. Several studies have shown that the prognosis for MC is better than that for SC [4-6]. But we can find that these studies have usually taken the form of case reports [7, 8]. In this case we report a case of the MPC. A man who was treated with radical surgery to remove his right kidney and rectal tumor is described in this report.

Case report

A 78-year-old man was admitted to our hospital on March 21, 2018 due to hemafecia lasting more than 2 months. The patient had no obvious inducement of hemafecia more than 2 months and the hemafecia occurred 5-6 times a day with small amount of blood each time, accompanied with mucus. There was no abdominal pain and no tenesmus. The patient vomited a small amount of food residue once. At that time there was fever and the highest body temperature was 39.0°C. There was no dizziness and fatigue, no cough expectoration, no chest throbbing, and other discomfort. In the local hospital, the body temperature dropped after taking Pantcprazole Sodium, Amoxicillin and other symptomatic drugs. However, the hemafecia was still recurring. Additionally, there was stool 5-6 times a day. The patient did not have further diagnosis and treatment. In February, there was no obvious improvement when the hemafecia occurred, then the patient went to the Outpatient Department. The digital rectal examination showed that the 3-4 cm right side of crissum has 1/3 circle of the occupying lesion. The diseased part was hard and there was no tenderness. The surface was smooth and there was undefined boundary. There was inconvenience of activities, and blood could be seen on the finger sheath. On physical examination, soft abdomen, no tenderness, no rebound pain, and no muscle protection were observed. The liver and spleen under the lip were not reached. Murphy's sign was negative, and the entire abdomen is not covered. There was no percussed pain in the double kidney area. The shifting dullness is negative. Auxiliary examination: (1) Abdominal CT showed:

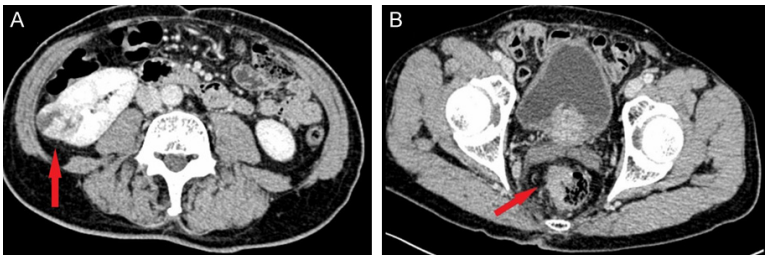

Figure 1. Abdominal CT image. A: There is a low density shadow can be seen on the right kidney which the edge is obviously strengthened (arrows). B: The right wall of the rectum was unevenly thickened (arrows).

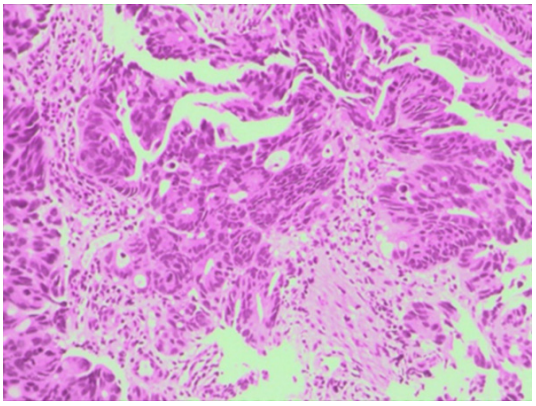

Figure 2. Pathological image: rectal highly differentiated adenocarcinoma (HE * 100).

1 A 30 mm * 34 mm round slightly low density shadow on the right kidney. The edge was obviously strengthened on enhanced arterial phase. The venous phase and delay phase were further strengthened. 2 The right wall of the rectum was unevenly thickened. The thickest place was about 22 mm. Enhancement was obviously strengthened. The serous surface was clear and there was no obvious enlargement of lymph nodes. The possibility of colorectal cancer was large (**Figure 1**). (2) On colonoscopy, a protruding focus was seen in the endoscopy about 6-7 cm deep. At the 3/5 circumference, the tissue was crisp and easy to bleed. The direct diagnosis under endoscopy was rectum cancer. The pathological report of the enteroscope showed that it was adenocarcinoma of the rectum (**Figure 2**). After consultation with the Department of Urology, it was suggested that radical nephrectomy should be performed in the same period considering the possibility of malignant tumors in the right kidney. On March 30, 2018, the patient underwent laparoscopic radical resection of rectal cancer and radical nephrectomy under general anesthesia, during which there was complete resection of right kidney and rectal tumors (**Figure 3**). Intraoperative frozen pathology revealed that right renal cell carcinoma and rectal highly differentiated adenocarcinoma. After the operation, the patient recovered well and was discharged from hospital. Periodic review was suggested. Postoperative pathological report: (right kidney) clear cell renal cell carcinoma (tumor size 2.8 * 2.4 cm, Fuhrman I-II grade) (**Figure 4**). There was no clear pulse tube or nerve recidivism, and the ureteral margin was negative. (Rectal) Ulcerative type of differentiated adenocarcinoma (tumor size: 3.5 * 2.5 cm), infiltrating to outer membrane adipose tissue, and the nerve was associated with recidivism. There was no clear vascular tumor thrombus. The upper margin and the examination margin were negative, and the 4/12 of lymph nodes in the pericardial lymph nodes were found to be cancer metastasis. Immunohistochemistry: C6-2: CD10 (+), Vim (+), LCK (-), CK7 (-), PSA (-), Ki-67 (+, 3%); H4-2: MSH2 (+), MSH6 (+), MLH1 (+), PMS2 (+), Muc-2 (+), Muc-6 (-), Muc-5AC (-), CD34 (+, vascular), P53 (+), Ki-67 (+, 70%), CK7 (+), CK20 (+), COX-2 (+), CEA (+).

Discussion

It is difficult to separate epidemiological considerations of rectal cancer from those of colon cancer because epidemiological studies often consider colon and rectal cancer together [9]. Colorectal cancer is the third most common cancer and one of the major causes of cancer-related death in the world [10]. Furthermore, the rectum is reported to be the most common site of these tumors [11]. Radical resection is the main treatment option for rectal tumors [12]. Renal cell carcinoma (RCC) is a common malignant tumor of the genitourinary system and accounts for 2%-3% of adult malignant tumors [13]. It is more common in those with right kidney cancer [14]. Radical nephrectomy is the standard approach for treating such patients [15, 16]. In this case of primary renal cell carcinoma with rectal carcinoma, the diagnosis of the patient was MPC.

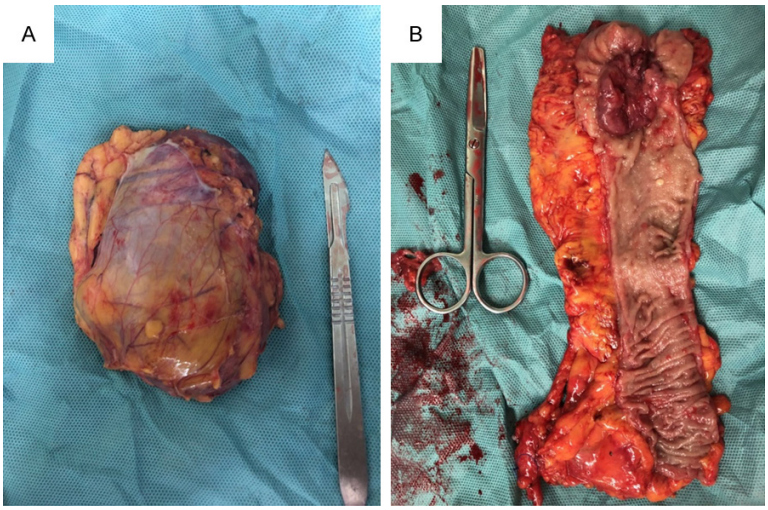

Figure 3. A: Right kidney specimen. B: Rectal tumor specimen.

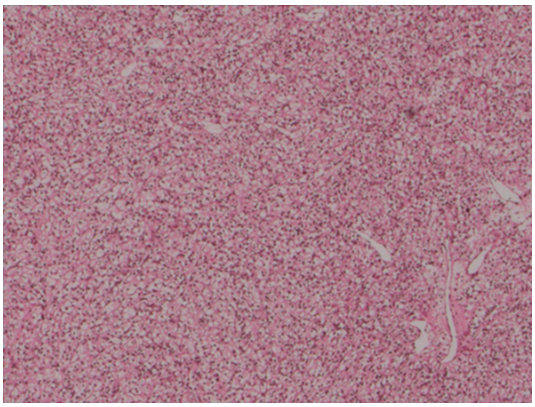

Figure 4. Pathological image: clear cell renal cell carcinoma (HE * 100).

Multiple primary cancer (MPC), also known as repeated and multiple cancer, refers to a patient with two or more than two unrelated primary cancers, which can occur in different parts of the same organ or the same system, and can occur in different organs or different systems. It is a rare phenomenon in the pathogenesis of cancer. Patients with a tumor interval within 6 months were called Synchronous Carcinoma (SC), and more than 6 months were called Metachronous Carcinoma (MC). The diagnosis of MPC was still based on the diagnostic criteria proposed by Warren [17] in 1932. (1) Each tumor must be malignant histologically; (2) Each tumor has its own unique pathological form, and each tumor has its own way of metastasis; (3) The tumor occurs in different parts and exists independently of each other; (4) The recurrence and metastasis must be excluded. This case is in conformity with the diagnostic criteria. At present, the incidence of MPC is obviously rising. The main reasons are as follows [18]: (1) The improvement of the medical level makes the diagnostic rate of MPC increase; (2) The prolongation of the patient's life, the increase of the opportunity for the occurrence of second tumors; (3) The increase in the population of tumor and chemotherapy will also lead to the increase of MPC; (4) Knowledge enhancement and regular physical examination. Pathogenesis of MPC has not been fully understood, and it is considered to be related to genetic factors, chromosome instability, susceptibility to environmental factors, decline of the immune system, and iatrogenic factors (radiotherapy and chemotherapy). A retrospective study of a large sample data [19] found that the incidence of MPC in the digestive system malignant tumor was 2.22%, and the chances of MPC in the male digestive system malignant tumor were more than those of the female, with the different time cancer being obviously more than that of the concurrent cancer. The main MPC is double cancers, and the MPC with more than double cancers was rare. After the occurrence of primary cancer, multiple cancers can occur from the same or subsequent months to 10 years after primary cancer [19]. The treatment of each independent cancer in MPC is consistent with single cancer. According to the different tissue sources of tumor, surgical treatment, radiotherapy, and chemotherapy regimen can be selected. Once MPC is diagnosed, positive radical operation should be provided if the patient's general condition is permitted and there is no surgical contraindication. For MC, a suitable radical treatment scheme can be selected according to the nature of the primary tumor. For SC, a tumor that has a poor prognosis, a direct threat to life, or an obvious symptom, should be treated first. It has been reported that after active treatment, the prognosis of patients with recurrent cancer is not worse than that of primary primary cancer [20]. Overall, the prognosis of

MPC is better than that of recurrent cancer and metastatic carcinoma. There are many reports of successful MPC operations [21]. The patients in our hospital were diagnosed as MC after the operation, and two tumors were radically removed because of timely detection. Because of the difference of medical level in different regions, MPC is easily misdiagnosed as recurrent cancer or metastatic cancer, thus the patient may miss the best time to receive treatment.

Conclusion

This report details a rare MPC of primary renal cell carcinoma with rectal carcinoma. This unique case highlights that MPC should be considered if a patient is suspected of having metastatic tumor. Such cases are of great positive significance for improving clinicians' vigilance, reducing misdiagnosis, and missed diagnosis.

Acknowledgements

This work was supported by Science and Technology Planning Project of Zhejiang Province (No.2017F30045), Traditional Chinese Medicine Science and Technology Planning Project (No.2018ZZ004), Science and Technology Planning Project of Zhejiang Province (No.2017-C33130).

Disclosure of conflict of interest

None.

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