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A Case of Undifferentiated Rectal Carcinoma Revealed by Autopsy

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ABSTRACT

A 58-year-old man was found to have a type 2 tumor in the rectum on colonoscopy in his local hospital. He had no metastases on abdominal computed tomography **(CT)**. However malignant lymphoma and endocrine cell carcinoma were suggested, an undifferentiated rectal malignant tumor was diagnosed because biopsy specimens were negative for various types of immunostaining. In other hospital for the purpose of the second opinion, the origin of tumor cells and the course of differentiation were histologically unclear and the final pathologic diagnosis was malignant tumor, small round cell type. He developed multiple liver metastases despite receiving neoadjuvant chemotherapy for regional lymph node metastases. He was referred to our hospital to receive systemic chemotherapy. The tumor enlarged progressively and he died although chemotherapy with FORFILI regimen (levofolinate calcium, irinotecan hydrochloride, fluorouracil) was tried. The final diagnosis was undifferentiated rectal carcinoma based on detailed examination at autopsy. This patient died within 5 months of the onset of symptoms, and the prognosis was poor. It is necessary to develop effective treatments, including chemotherapy, in the future.

Keywords: Rectal carcinoma; Undifferentiated carcinoma; Poor prognosis

INTRODUCTION

Undifferentiated rectal carcinoma is extremely rare in the colorectal carcinomas. Its incidence is said to be 53 of 4,277 rare histological types of colorectal cancer in the Japanese literature [1]. It is seemed to be confused in differentiating the diagnosis of undifferentiated carcinoma and endocrine cell carcinoma [2]. In our patient, histological diagnosis was difficult, but final diagnosis was undifferentiated rectal carcinoma based on detailed examination at autopsy.

CASE REPORT

A 58-year-old man was found to have a type 2 tumor in the rectum (Ra-Rb) on colonoscopy in his local hospital. He had no metastases on abdominal CT. However biopsy specimens were suggested malignant lymphoma and endocrine cell carcinoma, they were diagnosed undifferentiated because they were negative for various types of immunostaining. In other hospital for the purpose of the second opinion, the origin of tumor cells and the course of differentiation were histologically unclear and the final pathologic diagnosis was malignant tumor, small round cell type. He developed multiple liver metastases on abdominal CT despite receiving neoadjuvant chemotherapy for regional lymph node metastases. He was referred to our hospital to receive systemic chemotherapy. The tumor enlarged progressively and he died although another chemotherapy with FORFILI regimen (levofolinate calcium : 200 mg/m^2, irinotecan hydrochloride 180 mg/m^2, fluorouracil : 400 mg/m^2 bolus, fluorouracil : 2400 mg/m^2 intravenous infusion) was tried. He died within 5 months of the onset of symptoms, and the prognosis was extremely poor. Autopsy was performed for the purpose of histological diagnosis. Autopsy found a 7.5 cm x 5 cm circumferential type 4 tumor mainly in the Rb area of the rectum (Figure 1a). In the cut surface of the rectum, there were lesions showing direct infiltration into the prostate (Figure 1b). Multiple metastases were noted in the hepatic lobes (Figure 1c) and the entire surface of the mesenterium.

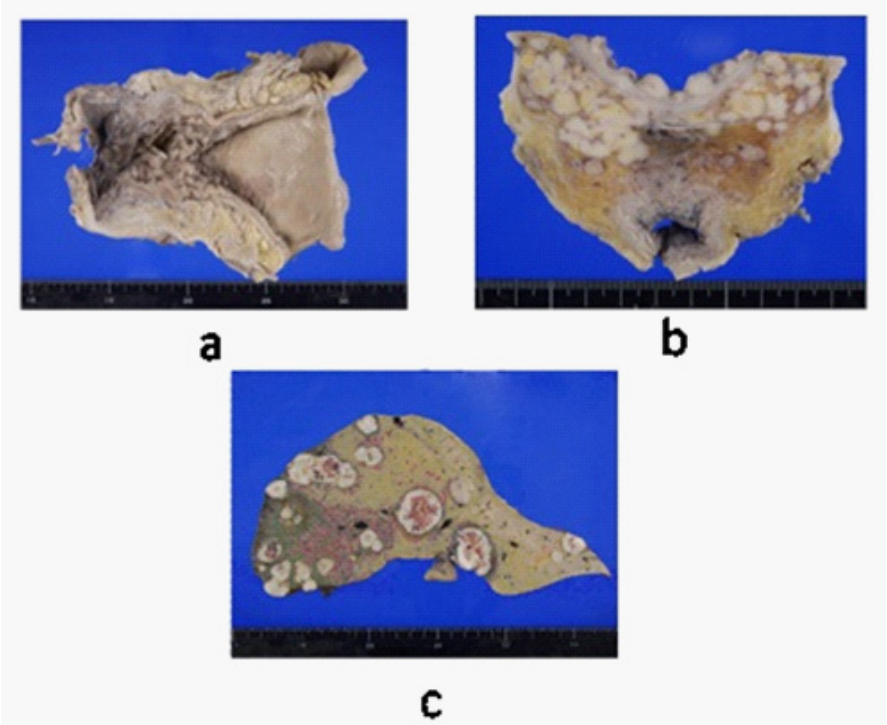

Figure 1: (a) A 7.5 cm x 5 cm circumferential type 4 tumor is noted mainly in the Rb of the rectum.

(b) In the cut surface of the rectum, there is a yellowish white nodular lesion mainly under the mucosa, which shows direct infiltration into the prostate. **(c)** Multiple metastases are noted in both hepatic lobes. The biggest one measures 4.5 cm x 4.5 cm. It is a yellowish white well-defined lesion with hemorrhage at its center.

In histopathological findings, staining with hematoxylin and eosin revealed a tumor growing diffusely and extensive necrosis was also observed (Figure 2).

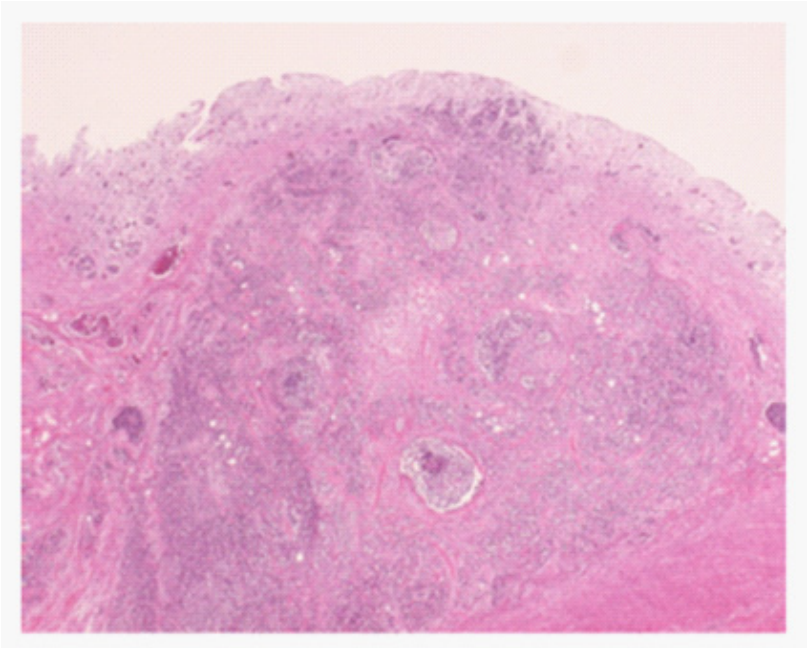

Figure 2: Histopathological finding obtained by staining with hematoxylin and eosin (4×) shows a tumor growing diffusely and extensive necrosis.

In immune staining, an extremely small part of specimens were positive for keratin (Figure 3) and specimens were negative for all of LCA, chromogranin, synaptophysin, and CD56. Based on these findings, undifferentiated rectal carcinoma was diagnosed finally.

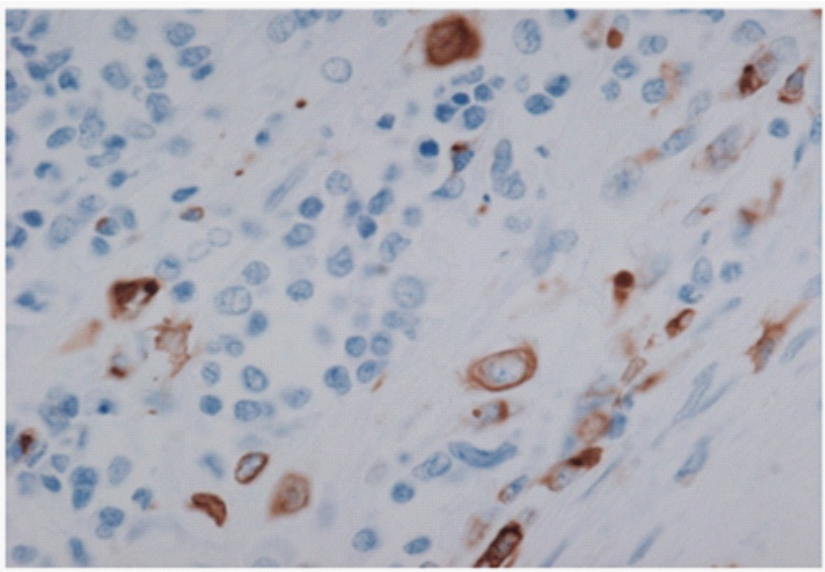

Figure 3: Histopathological finding obtained by immune staining with keratin shows an extremely small part of specimens are positive.

DISCUSSION

Histological diagnosis in our patient was difficult. It is suggested that biopsy findings may not be enough to make a histological diagnosis of undifferentiated carcinoma. He died before receiving surgical resection, because the disease progressed rapidly. The systemic chemotherapy with irinotecan hydrochloride plus hepatic arterial infusion chemotherapy with fluorouracil were markedly effective [3]. Therefore, chemotherapy with FORFILI including irinotecan hydrochloride and fluorouracil had to be selected for our patient. However, chemotherapy was ineffective for our patient. Since autopsy was done, autopsy specimens were negative for chromogranin, synaptophysin, and CD 56 as markers for endocrine cell carcinoma in the immune staining. Therefore, the possibility of endocrine cell carcinoma was excluded. In differentiation from malignant lymphoma, specimens were negative for LCA as a marker for malignant lymphoma, while an extremely small part of the specimens were positive for keratin as a marker for carcinoma. Therefore, the possibility of malignant lymphoma was also excluded. Specimens diffusely show a positive test for keratin in patients with ordinary carcinoma, while only an extremely small part of specimens tested positive for keratin in our patient. This was presumably because the differentiation of the tumor was extremely poor. The histological malignancy was closely correlated with biological malignancy in rectal carcinoma [4], and malignancy was generally higher and prognosis was poorer when the degree of histological differentiation was lower [5]. The prognosis of undifferentiated colorectal carcinoma is still controversial [6-8]. Five of eight patients with undifferentiated colorectal carcinoma lived for 6-28 years [6], and so the prognosis of undifferentiated carcinoma was considerably favorable. On the other hand, none of the patients with undifferentiated rectal carcinoma lived for 5 years and so [7], the prognosis of undifferentiated carcinoma was poor. Hepatic or lymphatic metastases were already noted in 80% of patients at diagnosis, and the incidence of remote metastases to bones, lungs, and peritoneum was approximately 25% [8].

In summary, histological diagnosis in our patient was difficult, but undifferentiated rectal carcinoma was diagnosed finally by autopsy. The prognosis of the undifferentiated rectal carcinoma is usually unfavorable. It is necessary to develop effective treatments, including chemotherapy, in the future.

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