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Case Presentation

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A Case of Colorectal Cancer Recurrence Post-Curative Endoscopic Resection: A Lesson to Learn?

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Abstract

Colorectal cancer-related mortality has significantly decreased due to advancements in Endoscopic submucosal dissection (ESD). Although rarely reported, local and distant recurrences can still occur even after curative resection. We present herein the case of a 67-year old male patient who underwent a curative resection of a large rectal Sm1 adenocarcinoma. One year later, he developed a local recurrence followed by distant metastasis.

Keywords: Endoscopic submucosal dissection; Curative endoscopic resection; Colorectal cancer

Introduction

Colorectal cancer is a leading cause of cancer related mortality. However, this mortality rate was reduced by colonoscopy and endoscopic resection of its precursor lesions. Over the last decade, Endoscopic submucosal dissection has been largely evaluated allowing en bloc resection regardless of tumor size. Risk factors for local recurrence were size of lesion > 40 mm, piecemeal resection, non-R0 resection, histologically incomplete resection and severe fibrosis [1]. Recurrence after curative endoscopic resection seems rare and rarely reported. However, prospective study and long term follow up studies are lacking. We present herein a case report of locoregional recurrence of colorectal cancer despite a curative of rectal adenocarcinoma.

Case Presentation

A 67-year-old male patient with a medical history of an aortic valve replacement in 2019 and infectious endocarditis in May 2021, underwent a PET scan as a part of the evaluation for his recent endocarditis, which revealed a suspicious rectal hyperfixation. Colonoscopy identified a 5 cm homogenous granular Laterally Spreading Tumor (LST) in the lower rectum without macronodule. En bloc resection of the lesion was carried out via endoscopic Submucosal Dissection (ESD). Histology of the resected specimen revealed a moderately differentiated adenocarcinoma with a submucosal invasion of 467 µm (Sm1) **(Figure 1)**. The submucosal invasion was over 3 mm wide. There was no evidence of budding, lymphovascular or neural invasion. The lateral and deep margins were fully negative. Immunohistochemistry confirmed the pMMR status of the tumor. Due to the bad bowel preparation on the first colonoscopy, the patient had a total coloscopy in November 2021 (Boston score: 9) showing a fibrous scar without residual mass or adenoma. There was no other polyp or lesion over the rest of the colon. One year later, on December 2022, the patient presented with rectal bleeding. Digital rectal examination revealed a rectal induration. A new colonoscopy found an indurated, ulcerated at the previous resection site lesion in the lower rectum. At this time, he was referred to our hospital for further management.

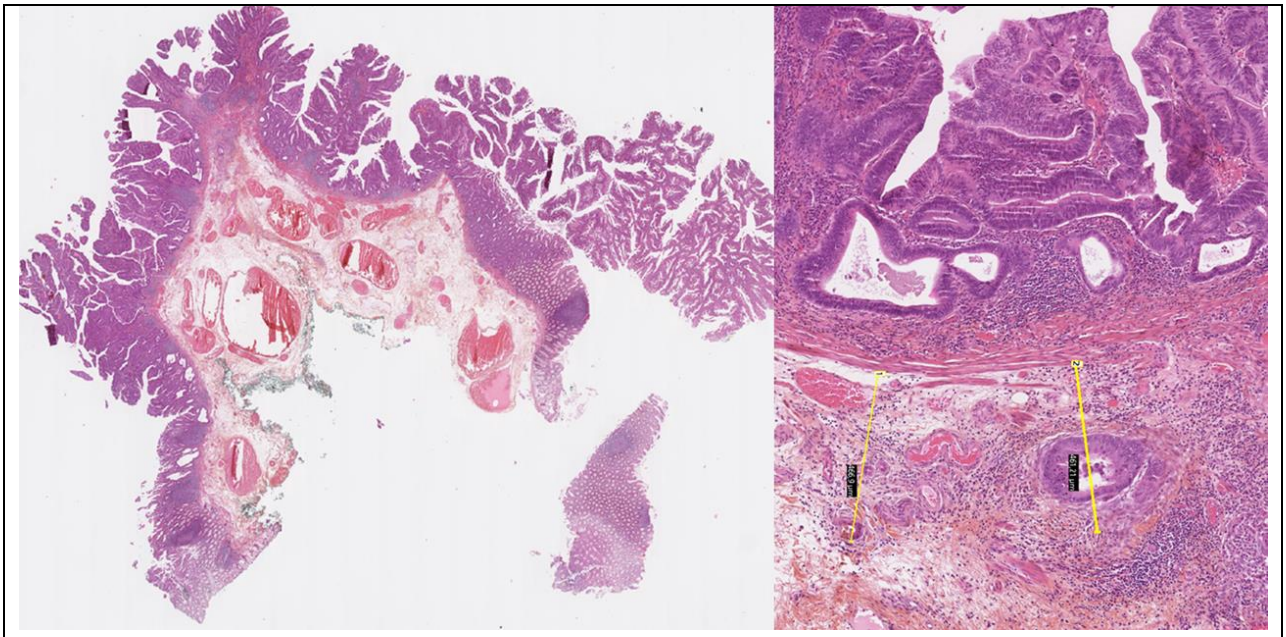

Figure 1: ESD resection specimen showing adenocarcinoma with submucosal invasion of 467 µm.

MRI confirmed a local recurrence with a suspicious lesion in contact with the prostate capsule. Neoadjuvant chemotherapy with FOLFIRINOX for 6 cycles was initiated, followed by chemoradiotherapy over five weeks (50 Gy with concomitant Capecitabine). At the end of the neoadjuvant therapy, follow-up CT scan and hepatic MRI revealed four new hepatic lesions compatible with liver metastasis. Liver biopsy confirmed a moderately differentiated

adenocarcinoma, pMMR, with KRAS mutation and loss function of PTEN and TP53.

In August 2023, a second line chemotherapy with FOLFIRI was initiated. After two cycles, the patient developed severe fatigue with tumor progression. Multiple muscular and subcutaneous nodules, lung metastasis and pleural carcinomatosis were diagnosed. Because a poor performance status, a palliative care was decided and the patient died at the end of September 2023. A second review by a pathology expert of the rectal ESD specimen confirmed that the initial lesion was indeed a moderately differentiated adenocarcinoma with only superficial submucosal invasion, without any further pejorative criteria that would have recommended additional surgery over simple surveillance.

Discussion

There is no doubt that colorectal ESD has favorably changed the prognosis of patients with early colorectal cancer when a curative resection is achieved. Curative resection is defined by the combination of the following criteria: en bloc R0 resection, superficial submucosal invasion (sm1 < 1000 µm), well to moderately differentiated adenocarcinoma, no lymphovascular invasion, and no grade 2 or 3 budding [2]. These lesions carry a low risk of lymph node metastasis (3%), and no further treatment is generally recommended based on international guidelines [2,3]. Our patient met all these criteria for curative resection of superficial rectal adenocarcinoma. However, one year later, he experienced severe local recurrence, despite the absence of lesions on the first endoscopic follow-up six months after the ESD.

An exhaustive review of the literature about the long-term outcomes of ESD consistently shows favorable results after curative resection of colorectal cancer [1,4,5]. However, all the available studies are retrospective and cases of local or distant recurrence despite a curative resection are scarce. Most of the local recurrences were described in patients with piecemeal resection or positive margins. A retrospective study by Okumura et al. investigated risk factors for local recurrence over a prolonged follow of 72 months. The study included 1344 patients and 1539 lesions. Only Seven patients experienced recurrence, and four of them already did not fulfill the definition of curative resection (because of piecemeal resection (n=2), positive margins (n=2), and deep submucosal invasion (> Sm1, n=1)) [1]. Another retrospective study evaluated long-term outcomes after successful treatment of large sessile polyps with a mean follow-up duration of 44 months. Fourteen patients (6.9%) had local recurrence. Three of them had initially carcinoma in situ and one had intramucosal cancer. All these patients had a positive resection margin that is already a well-known risk factor for recurrence [4]. Interestingly, a multicentric retrospective Korean study by Shin et al. included only intramucosal (n=352) and submucosal cancers (n= 98 Sm1 cancers). Among 450 patients, four recurrences were noted. Only two of these recurrent cancers happened after a curative endoscopic resection. These patients experienced distant metastasis and regional lymph node metastasis where the primary lesion was a T1 Sm1 cancer [5].

It is clear that ESD significantly reduces the recurrence rate of CRC. However, this does not mean that recurrence is impossible after a complete resection. Our case stay not sufficient to draw general conclusions, but it suggests that there may exist other missed risk factors contributing to the fulminant progression of cancer in some patients. Whether an

MRI or endoscopic ultrasound should have been performed before endoscopic resection to look for preexistent lymph node metastasisis still debated. If present, another treatment approach may have been adopted for locally advanced rectal cancer. Further large prospective studies are needed to better predict CRC recurrence and risk of lymph node metastasis. Until then, active surveillance remains essential for all patients. A second look at histology specimen by experts is crucial when there is doubt about the result. A follow-up coloscopy one year after resection is important even when the endoscopic resection of cancer is considered complete.

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