

Case Report

Solitary umbilical metastasis of colorectal cancer as the first and only presentation: A case report and literature review

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Abstract...

Umbilical metastasis from colorectal cancer is rare, and isolated umbilical metastasis is even rarer. Since the initial description of malignant umbilical metastasis, known as Sister Mary Joseph's nodule (SMJN), it has generally been regarded as a manifestation of advanced intra-abdominal malignancy with a poor prognosis. We herein report a case of this rare condition and review the limited published literature to further elucidate this condition and discuss its clinical management.

Keywords: Colorectal Cancer (CRC); Sister Mary Joseph's Nodule (SMJN).

Introduction

Malignant umbilical nodule was first described in the reported literature in 1864 [1], known as Sister Mary Joseph's nodule, named after Sister Mary Joseph Dempsey, surgical assistant of Dr William James Mayo who first noticed the associated occurrence of intra-abdominal malignancy and metastatic nodule. It is rare and accounts for 1-3% of intra-abdominal malignancy metastasis to umbilicus [2]. Since the introduction, it is almost eponymous as a malignant metastatic umbilical nodule referring an advanced stage of malignancy. During the period, though limited cases reported and no large series available, various survival outcomes were noted that implied some unclear factors might need to be clarified to interpret the condition. We herein present a case of umbilical metastasis from colorectal cancer and review the limited reports hoping to further stratify the possible different mechanisms and treatment options.

Case report

A 53-year-old female came to our emergent department with the chief complaint of right-sided abdominal pain and fullness for days. She denied fever and vomiting. Computer

tomography was performed and revealed a constrictive mass at middle part of transverse colon with features of obstruction (Figure 1). Colonoscopy was performed and a stenotic circumferential tumor was confirmed. A biopsy was done and a stent was placed to relieve obstruction. Two weeks later, she underwent robotic-assisted extended right hemicolectomy with primary anastomosis and pathology report was pT4aN1bM0 stage. Subsequently, she received adjuvant chemotherapy with FOLFOX regimen and regular followed up at outpatient department.

Six months after the operation, she noticed an enlarging, tender mass in the umbilical area. The lesion was firm and non-erythematous. A biopsy was performed, and pathology confirmed metastatic adenocarcinoma with immunohistochemical findings identical to those of the primary tumor. We performed Positron Emission Tomography (PET) for further evaluation. No other obvious metastases were identified, and only mildly increased FDG uptake was observed in the umbilical region, which was interpreted as favoring postsurgical change. This finding also highlights the limited sensitivity of PET for detecting umbilical metastasis (Figure 2). After discussion with the patient, we decided to perform complete excision of the lesion (Figure 3).

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During the operation, laparoscopic inspection of the entire abdominal cavity was also performed, and no suspicious lesions were found. After the operation, she continued chemotherapy in an adjuvant setting. Follow-up CT imaging 10 months later revealed stable disease without evidence of recurrence. Her oncological course was similar to that observed in patients with respectable oligometastatic colorectal cancer.



Figure 1: A Constrictive mass at middle part of transverse colon with features of obstruction.

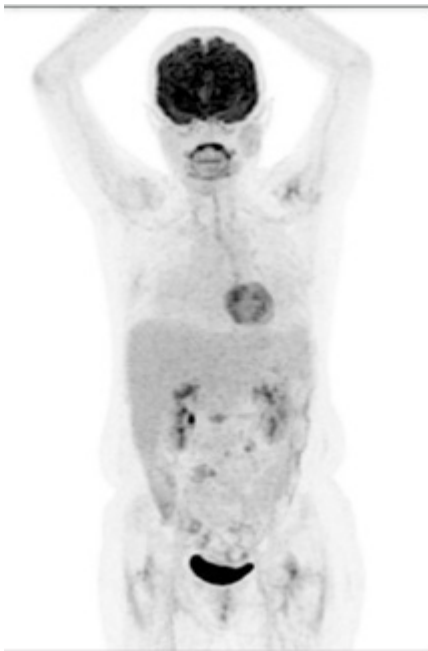


Figure 2: Only mildly increased FDG uptake at umbilical region by PET.

Discussion

Colorectal Cancer (CRC) is a globally important public health topic with more than 10% of the cases are metastatic in stage by the time of diagnosis, and 20%-50% of the patients with local disease develop metastasis during treatment [3]. With the improvement in treatment including surgery and chemotherapy, aggressive approach with primary site resection along with mastectomy for isolated metastases significantly improve survival [4]. Moreover, mastectomy in CRC cases

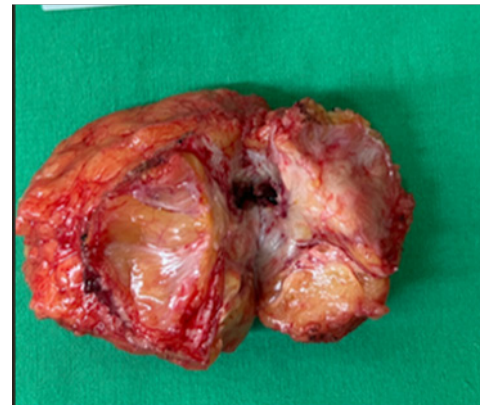
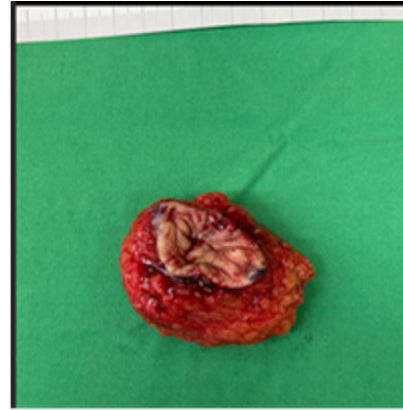


Figure 3: Only mildly increased FDG uptake at umbilical region by PET.

with multiple sites metastases still show positive impact on survival if macroscopically clearance of disease achieved [4]. However, such utilization is low especially limited metastases are not impressed. Therefore, mastectomy for really advanced disease such as unresectable metastases or high tumor burden peritoneal carcinomatosis should be of no value and abandoned.

The mechanisms of metastasis to the umbilical area include direct contiguous tumor extension, hematogenous spread, lymphatic spread, and direct extension along the vestigial remnants [5]. The umbilical region is connected to lymphatic system and has a rich blood supply such as from inferior epigastric vessels and deep circumflex iliac branches of the external iliac artery [6]. Though scarcely mentioned and discussed, different mechanisms and stage of the condition of umbilical malignant metastasis should have different treatment plans and outcomes. According to the reports available, in an advanced stage of disease, mean life expectancy is 2-11 months with palliative care [7]. However, with an aggressive treatment combining surgical excision, radiotherapy and chemotherapy, a mean survival of 17.6-21 months can be achieved [8].

Of note is that most reports mention about several different presentations such as profound peritoneal carcinomatosis with umbilical involvement or limited umbilical oligo-metastasis [8-10]. Besides, cutaneous metastasis of colorectal cancer at the umbilical area as the first presentation are also discussed [11]. The umbilicus by all means contains integumentary system and manifests similar pattern of cutaneous metastasis. Tracing back the history of how SMJN was reported, there was no doubt relating to quite advanced intraperitoneal malignancy. However, a significant period has elapsed and we literally

manage this clinical condition as very late staged disease and palliative cares are the goals. In the reports reviewed, we found some cases achieved long term survival and notably those all occurred in cases with limited metastasis or solitary umbilical metastasis [8-10]. In cases with advanced status such as profound peritoneal metastases or diffuse multiple organs metastases, aggressive treatment may prolong survival but difficult to have long term survival. Stratified by the mechanisms mentioned above, it is reasonable to have the inference that cases of limited metastases could be due to hematogenous or lymphatic metastases and aggressive treatment including excision and chemotherapy can have favorable outcome. In cases of umbilical metastasis due to contagious involvement of heavy peritoneal metastases, palliative treatment could be a better policy. Since no clear stratification about this topic was made and if we literally attribute umbilical metastasis to a quite advanced stage, we could be prone to choose more palliative attitude for treatment and subsequent worse outcome may be expected.

Conclusions

In view of the fact that several mechanisms are proposed for condition of umbilical metastasis from intraperitoneal malignancy and approaches of treatment and results are quite different. To treat malignant umbilical metastasis after evaluation of possible mechanisms and then manage accordingly seems to be an appropriate attitude.

However, because of the rarity of this condition, it is difficult to obtain large case series from which definitive conclusions can be drawn. We herein present this case in the hope of contributing to future data collection.

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