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Case Report

Synchronous adenocarcinoma of small bowel, appendix and rectum

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ABSTRACT

Synchronous colorectal carcinoma (SCRC) has been relatively a rare case as nature of the disease is not well established, due to limited data regarding the disease. The incident of SCRC showed by ranges from 2.3 to 12.4%, most cases were 2 site pathologies, involving colon and rectum. Due to its rarity, the diagnostic and treatment modalities provide such challenges to clinician. We reported a rare case in which patient had 3 sites synchronous adenocarcinoma of small bowel, appendix and rectum. Diagnosis was made intra-operatively as patient presented with acute small bowel obstruction. Here we discussed regarding the challenges in detecting and managing the synchronous lesion, including the interesting pathobiology of the disease.

Keywords: Synchronous, Colorectal cancer, Appendiceal neoplasm, Adenocarcinoma, Multiple neoplasm

INTRODUCTION

Colorectal cancer (CRC) is the commonest gastrointestinal cancer as the incidence is significantly rising globally. In the other hand, SCRC has been relatively a rare entity of colorectal cancer with reported incident ranges from 2.3 to 12.4%.[1] Despite the incident of SCRC increasing, multiple reasons that need to be discussed further despite of advanced technologies as clinically not all tumor able to detect earlier. Hence it will affect the diagnosis and prognosis as well as treatment later on.

The basis of pathological findings in histopathology biopsies were established in The Warren and Gates criteria to diagnose SCRSs. The criteria include: (1) definite picture of malignancy presented for each tumor; (2) each tumor must be distinct; (3) exclusion of the probability of one being metastasis, and (4) diagnosis of the synchronous lesions is made simultaneously or within 6 months of the initial diagnosis. In SCRC cases with two or more lesions, the largest lesion is designated as the index cancer.[1]

We reported a case of an elderly presented with perforated viscus that underwent exploratory laparotomy in which intraoperatively revealed multiple mass over small bowel, appendix and rectum.

CASE REPORT

A 74-year-old Malay man, presented to our institution with history of generalized abdominal pain for four days, progressively worsening prior to admission. He claimed had history of passing blackish stool and fever. He was previously well and denied family history of malignancy. On examination noted generalized tenderness with guarding over the abdomen and circumferential mass 3 cm from anal verge during per rectal examination. Bedside ultrasound abdomen showed free fluid over the Morrison pouch and he was treated as peritonitis with possible perforated tumor.

He underwent emergency exploratory laparotomy, in which intraoperatively noted pyo-peritoneum with multiple constricting lesions over the jejunum and nodule at the tip of appendix with circumferential low rectal tumor 3cm from the anal verge. There was also small sub-centimetre liver nodule at segment 4. On table sigmoidoscopy showed there was no other rectal or sigmoid colon lesion. Small bowel resection and end-to-end anastomosis, appendicectomy, diversion sigmoid colostomy and intraoperative biopsy of each lesion was done.

Histopathology analysis of small bowel revealed adenocarcinoma, poorly differentiated shows multiple ulceration area with malignant cell infiltration of the mucosa, lamina propria, submucosa and extended to serosa. The malignant tissues were seen arranged singly, in nests, insular pattern and in sheets. No obvious glandular formation seen. The malignant cells were moderate to large size display marked pleomorphism with hyperchromatic nuclei, vesicular nuclei and some shows prominent nucleoli. Mitosis area was brisk, and areas of necrosis and lympho-vascular permeation were detected. 1 out of 6 lymph nodes showed malignant cells infiltration. The mesentery also showed presence of tumor nodules. All surgical margins were clear from malignant cells.

Part of rectum sent for biopsy turn out to be adenocarcinoma, poorly differentiated, no obvious lympho-vascular invasion seen. Microscopic analysis of the appendix shows similar pathology of the small bowel and rectum.

Clinical and pathological findings showed synchronous carcinoma. Tumor marker showed significantly high for CA 125, CEA, and CA 19-9.

There was no significant morbidity post operatively as he was discharging home after 1 week of admission. Currently our patient on palliative care in view of not keen any further intervention or chemo-therapy.

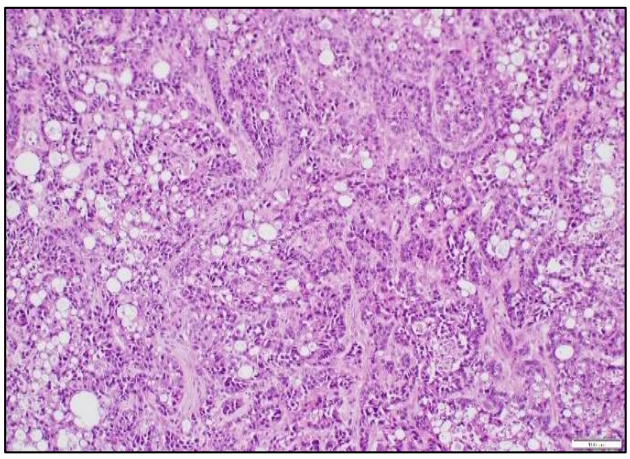

Figure 1: Appendix.

The picture shows moderate to large size malignant cells exhibits marked pleomorphism with hyperchromatic nuclei to vesicular nuclei. Intraglandular necrosis is also evident (H and E 100x).

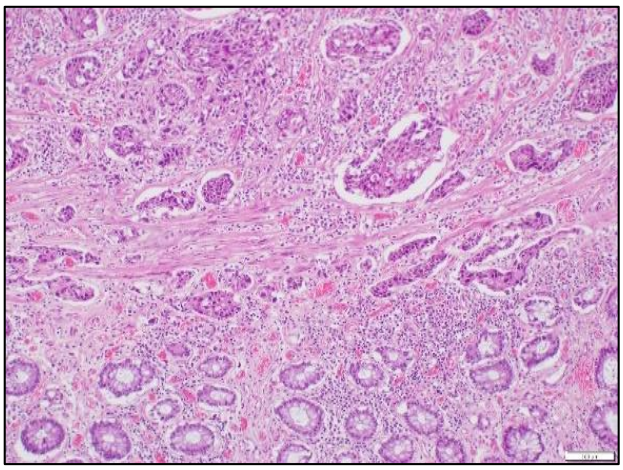

Figure 2: Rectum.

The picture shows large intestinal mucosa with tumor tissue infiltration arranged in sheets and glandular architecture. Some of the malignant cells are seen infiltrating the muscularis mucosae layer (H and E 100X).

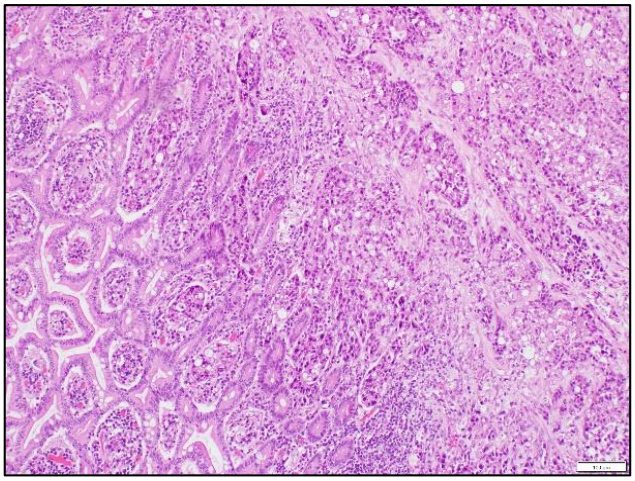

Figure 3: Small bowel.

The picture shows malignant cells infiltrating the stroma of small intestine arranged mainly in nests and some in complex glandular pattern (H and E 100X).

DISCUSSION

Colorectal carcinoma is second and third most common cancer worldwide. The incident reported highly raised in developed Asian (South Korea, Japan, Singapore) than in Malaysia but the mortality rate well controlled. This pattern accredited to their CRC screening program that will reduce the prevalence as well as the treatment.[2] As

reported the prevalence of SCRC is 3.5% of all colorectal carcinomas even though they have difference clinical, pathological and genetic features from solitary colorectal carcinoma but still lack in literature review in this recent study regarding both.[3]

SCRC refers to more than single primary lesion detected in initial presentation of the same patient. The prevalence of SCRC is approximately from 2.3 to 12.4 % in all colorectal carcinoma cases, as stated in Jun Yang literature these estimations are relatively broad in view of the fact that there is no definitive guidance for exact definition of synchronous events in the literatures.[1]

In earlier the concepts of multiple neoplasms either synchronous or metachronous cancer is not well distinguished yet as the result of these mixed together in analysis and different definition was given from differences researchers. As general we know synchronous cancer denoted as two or more that present in the same period or second tumor identified within 6 months of the initial findings. Meanwhile, metachronous cancer is another primary lesion was noted within 6 months after the first cancer was detected and located within 3 cm from the anastomosis site.[4]

As the case of SCRC has accelerated globally in these recent years but the evidence of this sporadic colorectal cancer is not well established in form of diagnosis, prognosis and treatment yet. Phenomenon is still unable to elucidate precisely.

There are several diagnostic techniques used, including radiologic computerized tomography (CT), magnetic resonance imaging (MRI), positron emission tomography-CT (PET-CT) and endoscopic approaches (endoscopy, video capsule) that are usually combined for a more accurate evaluation and diagnosis. Failure and impede to diagnosis will prompt in treatment and poor prognosis.[5] Unfortunately the failure to detect the lesion more than 50% especially during in earlier histological stage.[1]

Previously patient had given barium enema and rigid sigmoidoscopy during 1970 but as the times goes by as per advance technology recommended to do preoperative colonoscopy for thorough evaluation in earlier detection as the quality is better compared to barium enema with proper bowel preparation.[1]

Most SRCS consist of 2 tumor lesions but some have 3 or 4 simultaneous colon cancers but in certain case had reported up to 7.[1] Based on incidence and epidemiology in this kind of cases, most frequent the tumor of was located at the right colon when compared to solitary colorectal cancer.[3] The incident of location and recurrent lesion will affect mainly in treatment strategy.

Colorectum and appendix had similar mucosal pattern embryologically, thus neoplastic changes will affect the appendix. This evidence supported with report that 30% of sporadic colon cancer will be associated with appendiceal neoplasm.[6]

In the international literature stated that incident of SCRC of large bowel ranged 0.6% to 11% as in another literature specifically state that sigmoid colon and high rectum (50.67%), then lower rectum (36%).[7]

In form of molecular biology, SCRC is very common in patient who has microsatellite instability (MSI), represent higher chance for repetitive DNA sequence that are leading to failure to mismatch repair system. In a few studies showed patient who has higher degree of MSI-positive cancers is in SCRC compares to solitary colorectal cancer.[8]

In addition of this topic, multiple study had been proposed that prognosis of SCRC will be differ in form of follow-up, and different sample. Study was done by Nosho and colleagues in the United States in 2009 showed that SCRC have very poor prognosis in view of higher chances for metastasis and have high clinical effect to the complication. However, many recent studies were reported that SCRC had same prognosis with solitary colorectal carcinoma

CONCLUSION

Although extremely rare, presence of synchronous small bowel, appendix and colon adenocarcinoma is possible as depicted in our case. Hence thorough examination radiologically and intraoperatively is essential to avoid miss diagnose of synchronous bowel adenocarcinoma.

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