

CASE REPORT

An interesting case of primary squamous cell carcinoma of the colon with synchronous metastatic adenocarcinoma

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Key Clinical Message

We present a case of primary squamous cell carcinoma of the colon with synchronous metastatic adenocarcinoma. This case highlights the poor prognosis of these late presenting cancers. Furthermore, the unusual dual pathology raises questions about its potential etiology.

Keywords

Colon cancer, metastatic adenocarcinoma, squamous cell carcinoma (SCC) colon, synchronous tumors.

Introduction

A 77-year-old gentleman presented to the emergency department of a tertiary hospital with a 4-day history of constipation, abdominal pain, and a presyncopal episode occurring on a background of hypertension and mild Alzheimer's disease. Pertinent findings on examination were frank abdominal peritonism with sepsis. Blood investigations revealed acute renal injury. An erect chest x-ray (CXR) showed free subdiaphragmatic air. Abdominal computed tomography (CT) demonstrated a perforation associated with a mass in the splenic flexure with multiple hypoattenuating liver lesions (Figs. 1 and 2). He was subsequently taken to theater for an exploratory laparotomy. Intraoperatively, free pus was observed in the peritoneal cavity. A perforated colonic tumor in the splenic flexure was found with limited fecal contamination. Bilobar hard liver lesions were felt, and thought to represent metastases from the colonic tumor. These were not biopsied.

A peritoneal lavage and an extended right hemicolectomy with ileocolic anastomosis were performed. A postoperative drain was left near the anastomotic site in the left upper quadrant. Postoperatively, he was sent to the high-dependency unit for inotropic support but was discharged to the ward the following morning.

He initially improved. However, sepsis ensued a week later. A repeat abdominal CT showed a fluid collection in

the left upper quadrant. It was thought he may have had an anastomotic leak, and was therefore taken back to theater for a relook laparotomy. Intraoperatively, there was free purulent fluid in the abdomen and a loculated collection in the left upper quadrant. Although the ileocolic anastomosis was intact and looked healthy, a defunctioning ileostomy and abdominal lavage were performed in the setting of sepsis. Drains were again placed in this region.

Of significant note, by the time of this relook laparotomy, the histopathology from the perforated mass was revealed to be a squamous cell carcinoma (SCC) of the colon. This was an infiltrating moderately differentiated and focally keratinising SCC extending across the full thickness of the bowel wall to the free serosal surface. There was lymphovascular invasion. However, no lymph node parenchyma was involved. This could not be confirmed whether it was a primary or secondary lesion. The liver lesions were biopsied at the relook laparotomy to determine their relationship with the colonic tumor.

Interestingly, the liver biopsies were revealed to be an adenocarcinoma. They were negative for the lung marker Thyroid transcription factor-1 specific to lung and thyroid cancer (TTF1), prostate-specific antigen (PSA), the hepatocytic markers (Hep-par1 and alpha-feto protein), and squamous markers (CK5/6 and p63). Therefore, these were presumed to be metastatic disease from an unknown



Figure 1. Coronal computed tomography of the abdomen in our patient showing thickening of the splenic flexure of the colon accompanied by free air and localized fluid.



Figure 2. Axial (abdominal computed tomography) views of our patient showing multiple lesions in the liver.

primary tumor. Blood CA 19-9 was significantly elevated at 1800 U/mL. Similarly, his blood carcinoembryonic antigen (CEA) level was raised at 10 ng/mL. The liver

lesions were believed to be metastases originating from a foregut primary. This made both specimens (colonic and liver lesions) immunohistochemically distinct.

A physical examination, including a full dermatological examination and staging investigations (CT chest, and review of his previous CT abdomen/pelvis) revealed no obvious primary sources. It was, therefore, concluded that there was dual pathology; primary SCC of the colon and metastatic adenocarcinoma of an unknown origin.

Despite the relook laparotomy, washout, drains, and defunctioning ileostomy, the patient continued to have an ongoing collection in the region of the splenic flexure. This was managed with percutaneous drainage and antibiotics which finally controlled the sepsis. Following this, the patient and his next of kin decided that it was in his best interest, given his decreased physiological capacity to decline further investigation and intervention. As such, he did not receive any chemotherapy and was palliated. He was transferred to a hospice and he passed away a month later.

Discussion

Primary squamous cell cancer (SCC) of the bowel is an extremely rare entity, accounting for 0.1–0.2% of all colorectal malignancies [1, 2]. The first ever described case of SCC bowel was in 1919 by Schmidtman [3]. The mean age of affected individuals is between 55 and 60 with a higher preponderance in women with a ratio of 7:1 [4].

Its etiology is currently poorly understood. There are various hypotheses with regard to its pathophysiology. The pluripotent stem cell theory postulates that SCC develops from undifferentiated basal cells in the colon after mucosal injury [5, 6]. Others have suggested epithelial damage stimulating the proliferation of uncommitted basal cells into squamous cells which then become neoplastic [6]. Thirdly, inflammation secondary to infection or inflammatory bowel disease has been implicated [6]. The presence of squamous cell differentiation in other adenocarcinomas has also led some to believe that these cancers may develop from established adenocarcinomas or adenomas [2, 5, 6]. As such, primary SCC colon has been associated with ulcerative colitis, prior radiation, ovarian cancer, endometrial cancer, schistosomiasis human papilloma virus, colocutaneous fistulas, and colonic duplication [2, 5].

There are certain diagnostic criteria that need to be met for its diagnosis. (1) A primary SCC from a distant site must be excluded. (2) The primary bowel tumor must also not have a squamous-lined fistulous tract, proximal SCCs of the anus with primary extension must be excluded. (3) SCC must be histologically confirmed [1, 5, 7]. A recent case study describes colonic SCCs as being

predominantly left sided. Only one of these has been described in the splenic flexure [8]. Most SCCs of the bowel are advanced cancers and are usually node positive [4]. As such, most of the cases studied presented as emergencies, that is, acute bowel obstruction or perforation. These were also associated with a higher incidence of synchronous tumors within the bowel [9, 10]. This is similar to our case in which the patient was symptom-free until a few days before presentation. Preoperative diagnoses of these cancers are extremely difficult for this reason [9].

Due to the rarity of these tumors, the prognosis of this disease has not been confirmed [7]. Comer et al. however, suggested that primary SCC has a poorer prognosis than adenocarcinoma [11]. Similarly due to the above reasons, optimum management of these cancers has not been clearly defined. Most studies describe surgery as a primary treatment. In fact, surgery is often offered as an emergency treatment due to the late presentation of this condition. Rasheed et al. and Clarke et al. both describe successful use of chemo-radiation therapy for treatment of colorectal SCC. A chemotherapy regime comprising of mitomycin, cisplatin, and 5-fluorouracil, with concurrent radiotherapy similar to the treatment of SCC anus was used with relative success.

Interestingly, in this case, apart from the primary colorectal SCC, a subsequent adenocarcinoma was identified in the liver. This was initially presumed to be metastasis from the colon. Adenocarcinoma has previously been implicated in the pathogenesis of primary bowel SCC [5, 6]. Vezeridis et al. describe one case in their series of six patients with synchronous adenocarcinoma of the rectum and SCC of the transverse colon [12]. Aside from adenocarcinomas, Alatassi et al. describe a case of SCC rectum originating from an ovarian dermoid cyst which eroded into the wall of the rectum and evolved into SCC [13]. Due to the fact that our patient opted for palliation before further investigation, the primary source of the adenocarcinoma was not found. Given the high CA-19-9, a primary pancreatic malignancy may have been the cause. This is, however, not diagnostic [14]. Additionally, the bladder was not investigated as the patient was palliated.

This case highlights that, although rare, colonic SCC has a poorer prognosis. This is partially due to its late clinical presentation. More research needs to be done with regards to its etiology (particularly its predilection to other adenocarcinomas) and clinical sequelae. Unfortunately due to its rarity, randomized control trials of significance have been virtually impossible. A better understanding will lead to optimum management and improve patient care.

Conflict of Interest

None declared.

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