brief report

Adenocarcinoma of the colon in children: Case series and mini-review of the literature

Youssef Al-Tonbary *, Ahmad Darwish, Ahmad El-Hussein, Ashraf Fouda

Hematology/Oncology Unit, Mansoura University Children Hospital, Mansoura, Egypt

* Correspondance. ytonbary@gmail.com · Accepted for publication 24 November 2012

Hematol Oncol Stem Cell Ther 2013; 6(1): 29–33

DOI: http://dx.doi.org/10.1016/j.hemonc.2013.02.003

Colon cancer is extremely rare in children. This article reports three cases of adenocarcinoma of the colon. A 12-year-old boy, a 13-year-old boy, and a 13-year-old girl presented with constipation and abdominal enlargement over a two-month duration. Abdominal ultrasound and barium enema confirmed a stenotic segment at the rectum with obvious shouldering. Adenocarcinoma was diagnosed following colonoscopic biopsy and laparotomy. We conclude that any child presenting with unexplained persistent constipation, abdominal distension or bleeding per rectum, colon cancer should be suspected and investigated with endoscopy or barium enema.

Primary gastrointestinal system malignancies constitute approximately 2% of pediatric neoplasm and, of these, colorectal carcinoma (CRC) is the second most common malignancy after primary liver tumors.[1] Therefore, CRC remains unsuspected in children and most patients (60–80%) are in advanced stage at presentation.[2] The overall prognosis is poor because of the delay in diagnosis, advanced stage of disease and lack of histological differentiation.[3]

CASE 1

A 12-year-old boy complained of recurrent abdominal pain and constipation over a period of two months. There was no past history or family history of gastrointestinal problems. Examination revealed marked abdominal distension with no organomegaly. Per rectum (PR) examination revealed a large circumferential lesion obstructing the lumen, 3 cm from anal verge with limited mobility.

Abdominal ultrasound showed a long stenotic segment at the rectum with obvious shouldering at the proximal and distal ends measuring 5 cm in length and 1.6 cm in thickness, which is suggestive of a rectal tumor. The colon proximal to the lesion was markedly dilated. Barium enema confirmed shouldering and a granular mucosal pattern (Figure 1).

Colonoscopy revealed a large stenotic mass starting at 4 cm from anal verge for the long segment affecting the entire circumference of the rectum with marked luminal stenosis. Endoscope failed to pass. Multiple biopsies were taken. Pathological examination of the masses revealed firmness in consistency and a grayish whiteness in color, while microscopic examination showed grouped and scattered malignant epithelial cells with a moderate degree of atypia and pleomorphism within mucin lakes. Some showed attempts at acinar formation which is consistent with mucoid adenocarcinoma (Figure 2).

Surgical resection of the colon with colostomy was performed. There was no evidence of visceral or nodal spread. The patient received radiotherapy and adjuvant chemotherapy in the form of 5-fluorouracil and folinic acid. The patient had recurrence within six months and died within one year.

CASE 2

A 13-year-old boy presented with a two-month history of insidious onset and progressive course of abdominal enlargement, vomiting, dizziness, weakness, and dyspnea. The condition was associated with unilateral edema of left lower limb followed by severe abdominal pain and anorexia. The patient showed marked cachexia (weight loss and muscle wasting) with pallor. Abdominal examination revealed multiple abdominal masses involving mainly the left hypochondrial region with ascites (positive shifting dullness). PR examination was normal.

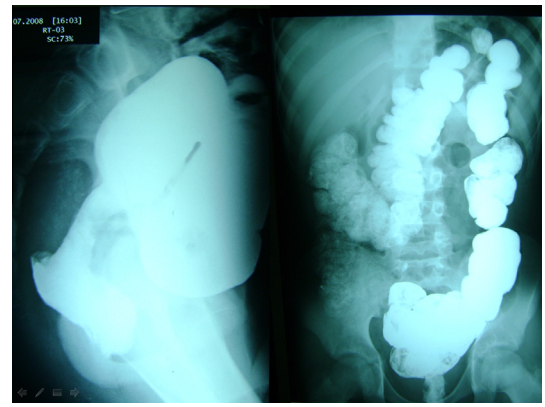

Figure 1. Case 1, Barium enema showing shouldering and granular mucosal pattern.

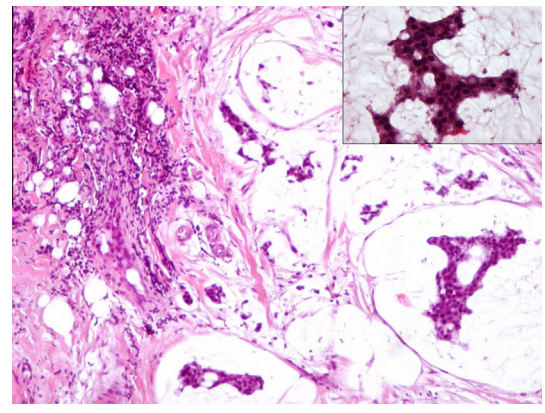

Figure 2. Case 1, H&E shows mucoid adenocarcinoma (high and low power).

Blood tests showed normocytic and normochromic anemia. Serum albumin was 3.4 g/dl and CA-19-9 (Carbohydrate Antigen 19-9) was 1020 U/ml (normal up to 37 U/ml).

Computed tomography (CT) of the abdomen (Figure 3) revealed a heterogeneously enhancing soft tissue mass with calcification inside seen in the left hypochondrial region, circumferentially surrounding the descending colon, measuring about 5 × 6 cm. Evidence of diffuse enhancing peritoneal thickening and nodules, with scalloping of the posterolateral surface of the liver, extending between the urinary bladder and rectum, filling the Douglas pouch, as well as the central mesenteric mass, suggestive of pseudomyxomal peritoneal moderate ascites. CT chest revealed left basal pulmonary nodule, mostly metastatic.

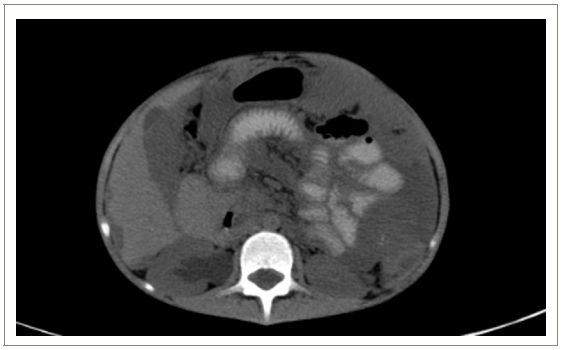

Figure 3. Case 2, CT abdomen.

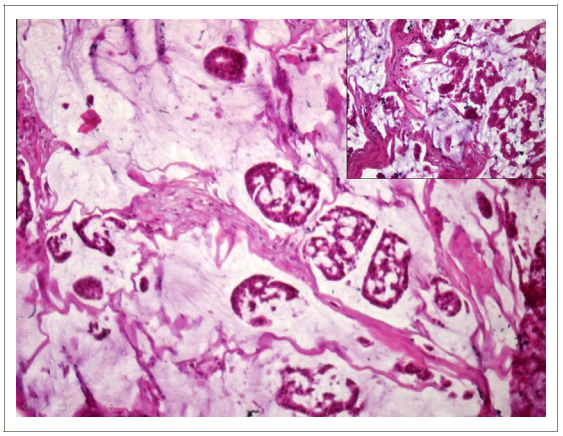

Figure 4. Case 2, H&E shows mucoid adenocarcinoma (high and low power).

A debulking operation and biopsy were performed on the patient and pathology revealed malignant epithelial cells arranged in glandular structures with an area of cribriform pattern and solid sheets, and groups of tumor cells floating in pools of mucin.

Figure 4 shows mucoid adenocarcinoma.

The patient received chemotherapy FOLFOX 4 protocol (Oxaliplatin, Folinic Acid and 5-Fluorouracil) for three cycles every three weeks, but died from sepsis three months after diagnosis.

CASE 3

A 13-year-old girl presented with history of bleeding per rectum. The condition was associated with a mass projecting from the anal canal. PR examination revealed a mass in the lower part of the anal canal.

Blood picture showed normocytic and normochromic anemia. Bone marrow aspiration was free.