of guided fine needle aspiration, he underwent a thoracotomy with wedge excision of the right lung tumor. The biopsy showed a pulmonary adenocarcinoma, moderately-well differentiated with infiltration of the perivisceral pleura. Further staging revealed the presence of CNS metastases, managed with brain radiotherapy.

Two months after an initial response to 6 cycles of carboplatin and pemetrexed chemotherapy disease progression was documented in the thorax and docetaxel chemotherapy was initiated. After 2 cycles the patient was admitted to the hospital with abdominal pain, nausea and severe watery diarrhea (up to 20 loose stools per day), followed by febrile neutropenia and mucositis. Physical examination revealed hypotension, tachycardia and abdominal distention. Full blood count revealed WBC 1730 with an absolute number of 480 neutrophils, normal hemoglobin and platelets. Colonoscopy revealed edema of the mucosa and congestion with diffuse ulcerations. Antibiotic therapy with intravenous metronidazole and oral vancomycin as well as granulocyte colony-stimulating factor (GCSF) was initiated with complete resolution of symptoms. He later received 3 more cycles of reduced dose of docetaxel but was readmitted 10 days after the last cycle with recurrence of colitis, abdominal pain, bloody diarrhea and grade 4 febrile neutropenia. A flexible sigmoidoscopy revealed moderate to severe mucosal sigmoid inflammation with diffuse subepithelial hemorrhages. Biopsy revealed mucosal ulceration and inflammation, crypt abscesses and dilatation. The patient received supportive care with fluids and steroid administration. Seven days later he was discharged free of symptoms.

From 2000 to 2010, 22 cases of severe colitis have been reported in the literature (20 with metastatic breast cancer, 1 prostate, 1 pancreatic cancer). Docetaxel-based chemotherapy regimens have been associated with a wide spectrum of colitis, with a 1.9% incidence of grade 3-4 severity. The most frequent types of colitis is the ischemic, as well as the hemorrhagic colitis. Severe complications include bowel necrosis, colonic perforation and typhlitis. Ischemic colitis presents with acute abdominal pain and tenderness with neutropenia, fever and/or bloody diarrhea. Suggestive computed tomography (CT) scan of the abdomen and pelvis and a negative *Clostridium difficile* test support the diagnosis of colitis. Septicemia frequently occurs and the most common causative organisms are aerobic gram-negative bacteria. Neutropenia, fever and positive blood cultures are occasionally absent. Colonoscopy is associated with an increased risk of perforation and, therefore should be discouraged. The histopathological analysis is compatible with inflammatory changes, including mucosal and submucosal edema, hemorrhage, acute inflammatory infiltrates, mucosal ulceration and serositis [1-3]. Potential predisposing factors include age, abdominal surgery, hypertension, coronary artery disease, peripheral vascular disease, diabetes mellitus, localization in ascending colon, poor nutrition [1-3]. The pathophysiology is complex and still under investigation. The rapidly dividing crypt cells throughout the intestinal epithelium are damaged by chemotherapy which affects the absorptive capacity and results in an increase of solutes in the intestinal lumen, osmotic shift of water into the lumen and diarrhea [4]. The majority of cases can be controlled with anti-peristaltic agents, aggressive fluid resuscitation, bowel rest and broad antibiotic coverage. In contrast to other cases, ours hints that adequate reduction in docetaxel dose does not always prevent the relapse. Docetaxel-induced enterocolitis should be taken into account during daily practice.

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A case of hepatic flexure carcinoid with extended brain metastases

Dear Editor,

A 56-year-old Caucasian male was subjected urgently to right hemicolectomy due to a mass of the hepatic flexure, causing complete obstruction of the lumen. Pathology revealed a goblet cell carcinoid tumor. Chest and abdominal CT scan demonstrated hepatic, mediastinal and abdominal lymph node metastases, while bone scintigraphy yielded a "super-scan" image. The patient received 8 cycles of chemotherapy with paclitaxel, gemcitabine, bevacizumab, oxaliplatin and zoledronic acid. Six months after the operation, the patient was admitted to our department for surgical debulking of the liver disease due to symptomatology of carcinoid syndrome (diarrhea and hot flushes). Besides the standard preoperative studies, the patient was subjected to somatostatin-receptor whole-body scintigraphy which confirmed the liver, nodal metastases and bone metastases. He underwent excision of the segments II, III, IV, left half of the hepatic segment I, wedge excision of a lesion in the hepatic segment VI and microwave ablation of 3 smaller foci. Hepatoduodenal ligament lymph node dissection was also performed as well as cholecystectomy. The patient was discharged in good condition on the 7th postoperative day. He was re-admitted 4 days later due to fever. Chest and abdominal CT scans were performed without significant findings, the fever was attributed to wound infection, the wound was drained, antibiotic treatment was initiated and the patient was discharged afebrile 9 days later. He was admitted once again one month after the liver operation due to weakness and stupor and a brain MRI scan demonstrated diffuse brain lesions compatible with metastases, extending to both cerebral and cerebellar lobes, and causing obstructive hydrocephalus. The patient's mental status deteriorated and he passed away 5 days later.

Carcinoid tumors are distinct malignancies included in the family of neuroendocrine tumors with variable clinical manifestations, most of them (60%) arising from the gastrointestinal tract, 3.8% from the colon and rectum, while the hepatic flexure is one of the rarest sites accounting for less than 0.15% [1]. Tumors originating from the colon have the worse prognosis with a 5-year survival rate < 45% [2]. Brain metastases are very rare, occurring in about 2% of the

patients with metastatic carcinoid [3]. It is thus argued that imaging of the brain is justified only when the patient develops symptoms from the CNS, and that even in these cases roentgenography alone may be adequate [3]. Median survival after diagnosis of brain metastases ranges from 4 to 16 months [3]. There is no established staging system and preoperative work up may include chest and abdominal CT scan, somatostatin-receptor scintigraphy, and determination of serum chromogranin-A levels [4]. Surgery is an accepted approach in case of bowel obstruction and for the management of metastatic disease in the liver manifested with carcinoid syndrome [2,5]. The case we presented herein is distinct, given the primary site, the development of brain metastases in a very short period and the unusually rapid disease progression. To our knowledge this is the first case in the literature of extra-appendicular colonic carcinoid with brain metastases.

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A large fibrolamellar hepatocellular carcinoma in a 17-year-old male body builder

Dear Editor,

A 17-year-old boy presented to our emergency department complaining of abdominal distension and bloating after meals for the last two months. Physical examination revealed a palpable liver edge. The patient had no known history of hepatitis, blood transfusion or foreign travel, but reported use of anabolic steroids for body building and weight lifting since the age of 14. The exact dosage of these medicaments was not known. Laboratory tests were: hemoglobin 13.4 g/dL (13-18), white blood cell count 7,700/mL (4,000-10,000), platelet count 536,000/mL (150,000-400,000), INR 1.08 (0.8-1.2), aspartate aminotransferase 98 U/L, alanine aminotransferase 112 U/L, alkaline phosphatase 160 U/L (55-140), γ-glutamyl transferase 37 U/L (7-40). The serum level of AFP was 25 ng/mL (<10). Tests for hepatitis B surface antigen and anti-HCV antibodies were negative. An abdominal ultrasound revealed a large mass in the right hepatic lobe. An abdominal CT scan confirmed a very large mass of the right liver lobe, well-defined and lobulated, measuring 14 cm in maximum diameter. Differential diagnosis included fibrolamellar hepatocellular carcinoma (FLHCC), focal nodular hyperplasia (FNH), and hepatocellular carcinoma (HCC). An abdominal MRI that followed didn't solve the diagnostic problem and surgical exploration was decided. Right hepatectomy was performed and the pathological report was: right hepatectomy containing a neoplasm of 14 cm in maximum diameter, consistent with FLHCC; surgical margins were free of disease. The patient was discharged on the 7th postoperative day and remains free of disease for 5 years as indicated by serial abdominal ultrasound.

FLHCC is an uncommon tumor affecting mostly adolescents and young adults on the second and third decade of life, lacking underlying liver disease in contrast with HCC [1]. The use of anabolic steroids in the development of hepatic neoplasms is controversial, although various studies point out to an increased cancer risk [2]. Also animal studies over the use of anabolic steroids suggest reduced lifespan due to development of tumors in the liver and kidney [3]. Clinical symptoms and findings, if any, are non specific for the disease. Serum AFP levels are usually not elevated, but elevations in vitamin B12 binding capacity have been reported [4]. Tomographic imaging modalities usually reveal a solitary, hypervascular, heterogeneous mass that demonstrates well-defined, lobulated margins and lacks large areas of necrosis and hemorrhage that are typical of conventional HCC. Differential diagnoses for the imaging appearance of FLHCC include FNH, a large cavernous hemangioma, and HCC, because of the presence of a central scar most of the times [5]. The treatment of choice when possible is complete surgical resection; chemotherapy and radiotherapy are not effective. The median 5-year survival rate for patients with resectable FLHCC is 76%, which is much better compared with HCC patients. However, late metastasis and local recurrence have been reported [4,5].

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