

Liver Metastasis from Colonic Adenocarcinoma Presenting as Nephrolithiasis: Computed Tomography Findings

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Colorectal cancer is a major problem worldwide, with the highest incidence found in developed countries. According to the Israeli National Cancer Registry, colorectal cancer is the second most frequent cause of tumors in Israel, after breast cancer in women and prostate cancer in men. Furthermore, according to the latest report of the Ministry of Health, dated February 2011, there is a recent significant progressive increase in rectal and left-sided colorectal cancer in the Israeli Arab population that is probably related to their changing lifestyle. Early detection of the disease greatly improves the patient's survival. Unfortunately however, the presentation of the disease can sometimes be non-specific and misleading.

We present here a case of multiple hepatic metastases from colonic adenocarcinoma presenting as nephrolithiasis with right flank pain as the major symptom. The case is presented together with the interesting computed tomography findings and a brief discussion of the possible therapy options.

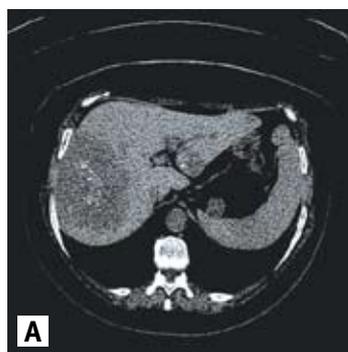
PATIENT DESCRIPTION

A 52 year old woman arrived at the emergency department with moderate right flank pain. The patient reported that the pain started 2 months earlier but was aggravated on the day of admission and was associated with mild fever (38°C) and dysuria. There was no history

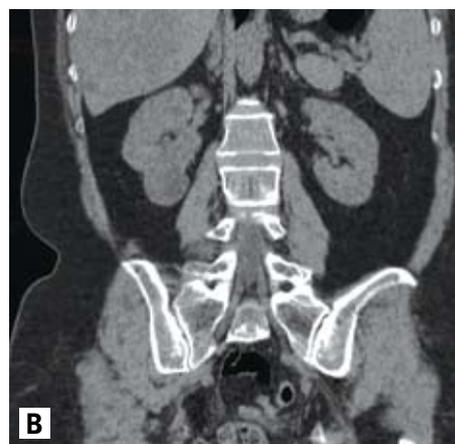
of chills, hematuria, nausea, vomiting, or abdominal or chest pain. The patient was a heavy smoker, obese (body mass index > 30), and had a history of uterine myomatosis and mild asthma treated as needed with a Seretide Diskus 50/500 inhaler (GlaxoSmithKline, UK). An ambulatory abdominal ultrasound performed 1 month before her admission revealed a right renal septated cyst and hyperechoic mass in the liver. Because of the sonographic findings an ambulatory CT scan was recommended, but the patient did not complete the exam.

On her admission to the emergency department, the physical examination was unremarkable except for mild to moderate right flank tenderness. Complete blood count and chemistry tests were normal, as were the abdominal and chest X-rays. Urinalysis and a urine culture were obtained. Urine dipstick revealed a trace of red blood cells. Concern regarding both urinary tract infection and nephrolithiasis was raised and a non-contrast CT of the abdomen and pelvis was performed

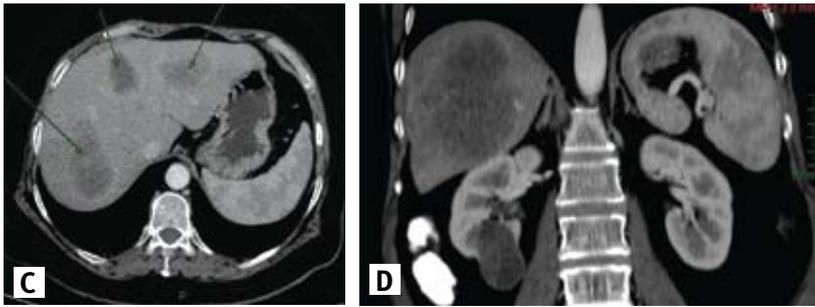
to rule out renal/ureteral stones and urinary obstruction. The examination was negative for stones or hydronephrosis, but revealed multiple huge hypodense masses in both liver lobes with central small punctate calcifications [Figure A] suspected to be metastatic dissemination, as well as an exophytic round mass with hyperdense component in the lower pole of the right kidney [Figure B] consistent with renal cell carcinoma. After 24 hours of hospitalization without a definite diagnosis, the patient continued to be symptomatic. Contrast-enhanced CT of the abdomen and pelvis was performed and showed enhancement of the hepatic lesion borders [Figure C], a renal lesion that was classified as Bosniak 3 mass [Figure D] and a multilobular polypoid mass in the middle portion of the descending colon without signs of obstruction, suspected to be a malignant colonic lesion. Upon hospitalization further medical anamnesis revealed weight loss of more than 10 kg during the previous 6 months with no night sweats or other symptoms. Further



[A] Axial non-contrast CT image shows multiple calcified hypodense hepatic masses



[B] Coronal non-contrast CT image shows exophytic round mass in the lower pole of the right kidney



[C] Axial CT image with oral and intravenous contrast shows enhancement of hepatic lesion borders (green arrows) [D] Coronal CT image with oral and intravenous contrast shows right renal lesion with thick, irregular calcifications and borders

tests were taken during her hospitalization including tumor markers: CA-125 13.5 U/ml, CA-15-3 14.83 U/ml, carcinoembryonic antigen 563.10 ng/ml, and CA 19-9 3522 U/ml. Fecal occult blood test was negative. On the fourth day of hospitalization CT guided-liver biopsy was performed; the pathological analysis of the liver demonstrated metastatic adenocarcinoma from colon. Two weeks later the patient underwent colonoscopy, and biopsies were taken from polyps found in the ascending colon, descending colon and proximal sigmoid colon. All pathological specimens demonstrated colonic adenocarcinoma. The patient was admitted to the oncology clinic. Since the patient had surgically unresectable disease she started chemotherapy treatment with the FOLFIRI regimen (folinic acid, fluorouracil, irinotecan).

COMMENT

Early diagnosis and prompt treatment are believed to improve survival in patients with colorectal cancer. Despite advances in surgery and systemic treatment, overall mortality rates have remained relatively unchanged and long-term survival is 55–58% [1].

Hepatic metastasis is one of the most important distant metastases of the colorectal cancer, and about 20% of patients with colorectal cancer have synchronous liver metastases at the time of diagnosis. When encountering a patient with liver metastases from colon cancer, the first

thing to do is to check for the presence of extrahepatic disease and assess the resectability of the hepatic lesions. If on the basis of liver imaging the patient is deemed resectable (10–20% of patients), a multidisciplinary team should decide whether to treat with surgery followed by adjuvant chemotherapy or perioperative chemotherapy and surgery [3,5].

There is general agreement that for patients with liver metastases from colorectal cancer, surgery is the best possible option. However, when treating metastatic disease with surgery, since only metastases visualized by radiologic means is addressed, recurrence is common after liver resection. Therefore, postoperative chemotherapy is used to increase survival and decrease the rate of metastatic recurrence. Based on recent small randomized studies, international guidelines recommend adjuvant treatment with oxaliplatin and 5-fluorouracil following hepatic resection [5].

Up to 90% of colorectal cancer patients have unresectable disease [2,4]. Some patients with initially unresectable disease may become resectable after induction chemotherapy. Updated guidelines from the National Comprehensive Cancer Network suggest that colorectal cancer patients initially appear to have unresectable metastatic colorectal cancer and can be categorized as having either potentially convertible or unconvertible disease [3]. Patients whose disease is believed to be unconvertible should be referred for alternative treatment (most often palliative chemotherapy), while induction chemotherapy

is appropriate for those whose disease is potentially convertible. After preoperative systemic chemotherapy, the resection rate ranges from 12.5% to 38% [4].

Few works have addressed the treatment of the primary cancer in the presence of synchronous liver metastases. Traditionally, resection of the primary tumor in the setting of unresectable metastatic disease has been advocated to prevent eventual obstruction, perforation, or bleeding due to primary tumor growth, as well as growth of additional metastatic disease that may influence long-term outcomes. Resection of colorectal cancer in patients with moderate or severe symptoms (i.e., rectal bleeding and anemia or intestinal obstruction) is mandatory before starting chemotherapy. However, surgical treatment of relatively asymptomatic colorectal cancers is still a matter of discussion [2].

In summary, patients with colon cancer can present with non-specific or seemingly unrelated or confusing symptoms, as illustrated in this case. Therefore, the clinician must be aware of the increasing prevalence of colorectal cancer, request appropriate imaging and endoscopic investigations in clinical suspicious cases, and refer patients promptly for further evaluation and suitable treatment options.

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