

Macroscopic Tumor in Portal Vein: A Rare Presentation of a Colon Carcinoma and A Short Review of the Literature: Case Report

Portal Vende Makroskopik Tümör: Nadir Bir Kolon Kanseri Prezantasyonu ve Literatürü Gözden Geçirme

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ABSTRACT The term portal vein thrombosis refers to complete or partial obstruction of blood flow in the portal vein, due to presence of a thrombus in the vassal lumen. Liver cirrhosis, intra-abdominal infection, thrombophilic disorders and malignancies are most typically associated with the development of portal vein thrombosis. However, portal vein thrombosis is a rare finding in colon cancer. Liver metastases of colon carcinoma are usually accompanied by microscopic tumor invasion into the intrahepatic portal vein and the incidence of macroscopic tumor thrombus in the trunk of the portal vein is rare. Despite the rare occurrence of such cases, even in the absence of significant liver metastasis, it is advisable to assess potential colorectal malignancies in evaluation of portal vein thrombosis. In this paper, we will represent a case report for a rare occurrence of portal vein thrombosis as the presenting symptom of colon cancer without significant liver metastasis.

Keywords: Portal vein; colonic neoplasms; thrombosis

ÖZET Portal ven trombozu, portal kan akımının ven lümenindeki trombüse bağlı parsiyel ya da tam oklüzyonudur. Karaciğer sirozu, intraabdominal enfeksiyonlar, trombofilik hastalıklar ve maligniteler gibi pek çok nedeni olabilir. Tümöral portal ven trombozu hepatosellüler karsinoma için sık görülen ve tanılabilir sayılabilecek bir bulgu olsa da kolon kanserlerinde oldukça nadirdir. Kolon kanserinin karaciğer metastazlarında intrahepatik portal venlerde mikroskopik tümör invazyonu bulunsa da, ana portal ven dallarında makroskopik tümöral trombüs oluşumu oldukça nadirdir. Nadir görülmesine rağmen belirgin karaciğer metastazı olmasa bile portal ven tümöral trombüsü görülen olgularda, kolon kanseri de ayırıcı tanıda akla getirilmelidir. Bu yazıda belirlenebilir parankimal karaciğer metastazı olmayan ancak portal vende tümöral trombüs saptanan kolon kanserli olgunun bilgisayarlı tomografi ve Doppler ultrasonografi bulgularını sunmayı amaçladık.

Anahtar Kelimeler: Portal ven; kolon neoplazileri; tromboz

The term portal vein thrombosis (PVT) refers to a complete or partial obstruction of blood flow in the portal vein, due to the presence of a thrombus in the vassal lumen. PVT is the second cause of portal hypertension, with liver cirrhosis being the first in Western countries. Liver cirrhosis and hepatocellular carcinoma, intra-abdominal infection, thrombophilic disorders - including myeloproliferative diseases - are most typically associated with the development of PVT.¹ Portal vein tumor thrombus is a common finding and significant negative prognostic indicator in hepatocellular carcinoma (HCC).² However, portal vein thrombus is a rare finding in colorectal cancer. A review on medical charts of 142 patients, who underwent hepatic resection for colorectal metastasis, indicates that only 4 (2.8%) had macroscopic portal vein invasion.³

In this paper, the case report of a patient diagnosed with colon cancer after evaluation of the presence of portal vein thrombosis in the absence of significant liver metastases was presented with “informed consent” approval.

CASE REPORT

The 68 year old female patient did not have any inherited or acquired thrombophilic predispositions. She was admitted to the hospital because of abdominal pain and intermittent rectal bleeding without significant weight loss. She had significant anemia. In the abdominal ultrasonography, portal vein thrombosis was observed while color Doppler ultrasound indicated a signal, which was interpreted as a finding of vascularity in the thrombus. In the spectral analysis, arterial flow spectrum was detected (Figures 1, 2). The patient was then assessed through abdominal tomography, with the involvement of oral and intravenous contrast application. The thrombus in the portal vein was confirmed, indicating heterogeneous and minimal contrast enhancement in the thrombus. Also splenic infarction was detected (Figures 3, 4). A tumor was detected in the ascending colon with local enlarged lymph nodes (Figure 5). The tumor in the ascending colon was later confirmed by colonoscopy and biopsy. It was constricting the lumen and partially blocking the passage. The biopsy result confirmed the diagnosis of colon adenocarcinoma (Figure 6).

DISCUSSION

The case of colorectal cancer with a macroscopic thrombus in portal vein without significant liver metastasis is presented. PVT is considered as a rare disorder. A recent autopsy study has shown that the life-time risk of PVT across the overall population is 1%.⁴ The main causes of PVT are: cirrhosis (28%); primary (23%) and secondary (44%) hepatobiliary malignancy; major abdominal infectious or inflammatory diseases (10%); and myeloproliferative disorder (3%).² Colorectal liver metastases are usually accompanied by microscopic tumor invasion into the intrahepatic portal vein and the incidence of macroscopic tumor thrombus in the trunk of the portal vein is rare.⁵

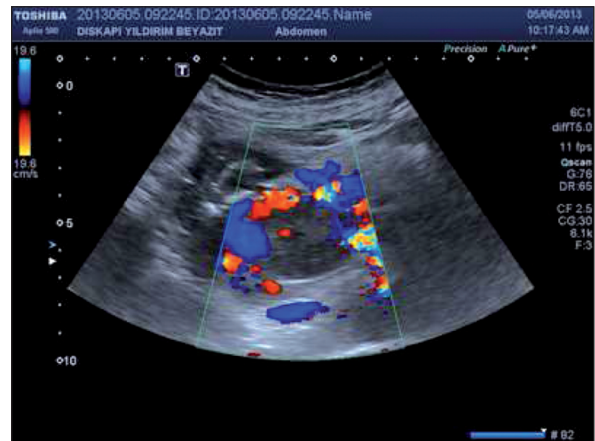


FIGURE 1: Colour Doppler ultrasonography of portal region: Axial image. Increase in the portal vein diameter and hypoechoic thrombus formation in the vassal lumen.

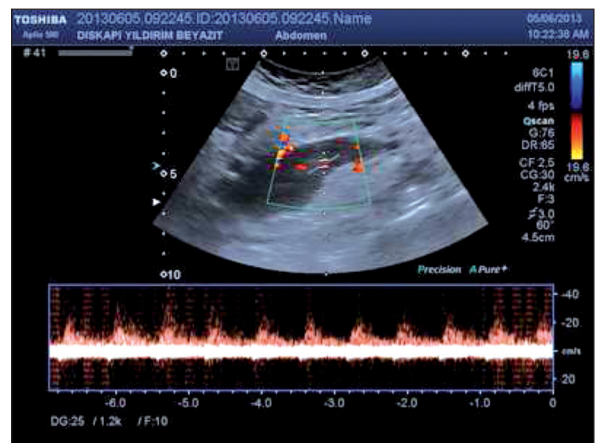


FIGURE 2: Spectral analysis of vascularity in thrombus: arterial flow spectrum was detected.



FIGURE 3: Axial abdominal tomography image before intravenous contrast injection: Increase in portal vein diameter and hypodense thrombus formation in vassal lumen.

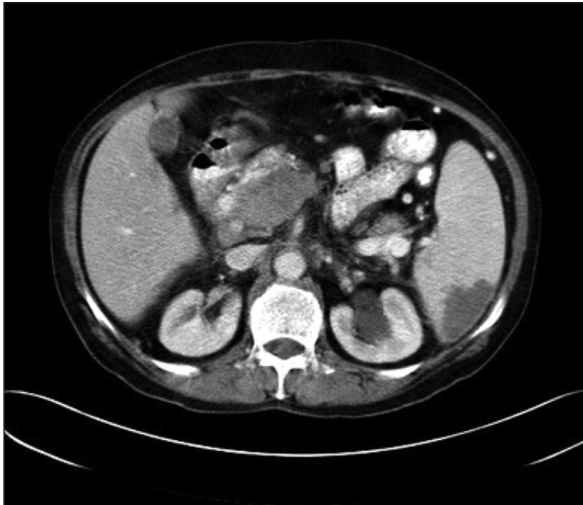


FIGURE 4: Axial abdominal tomography image after intravenous contrast injection: Contrast enhancement in thrombus and splenic infarction.

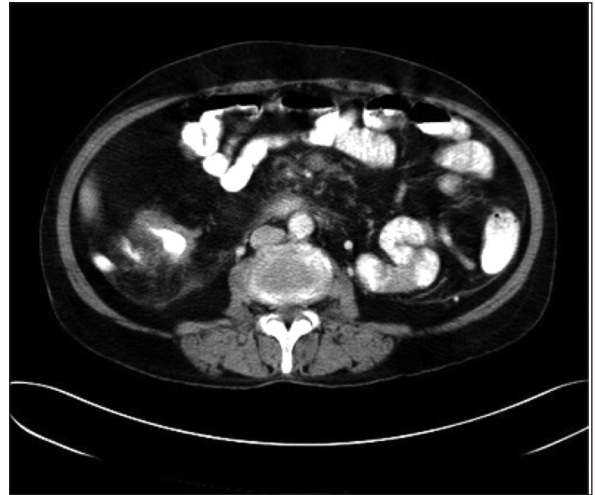


FIGURE 5: Axial abdominal tomography image after intravenous contrast injection: Thickening of the ascending colon wall due to tumor and increase in density in the neighboring fat tissue and small lymph nodes nearby.

According to other studies, malignancies - frequently of hepatic or pancreatic origin-are responsible for 21%-24% of overall PVT cases. Direct vascular invasion, compression by tumor mass or a hypercoagulable state are the mechanisms involved in neoplastic PVT development.⁶ On the other hand, microscopic tumor invasion into the intrahepatic portal vein was detected in about 20% of cases with liver metastasis from colorectal cancer.⁷ A study by Tomimaru et al. reviewed previously reported cases with macroscopic portal vein thrombus of successfully resected colorectal cancers.⁸ Data of 231 patients who underwent resection of liver metastases from primary colorectal cancer in their hospital from January 1990 through December 2008 were evaluated. Among these patients, only aforementioned patient's case showed macroscopic PVT (0.4%). Most reported cases of PVT from colorectal cancer had concomitant metastatic nodules in the liver parenchyma, and the PVT was continuous with the liver nodules, similar to PVT in hepatocellular carcinoma (HCC).⁷ Although this would be a rare occurrence, it is advisable to assess potential colorectal malignancies in the evaluation of portal vein thrombosis even though there is no concomitant significant liver metastasis.

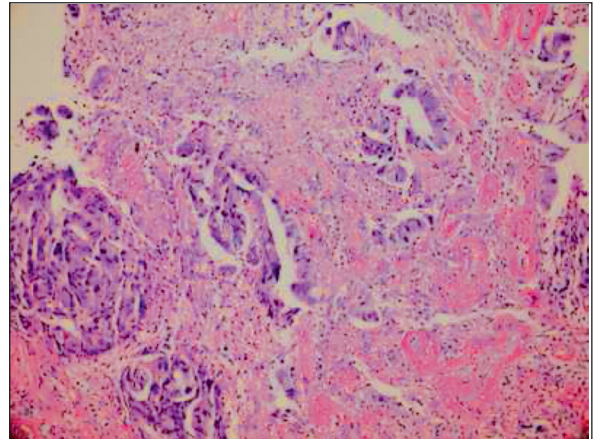


FIGURE 6: Biopsy from the ulcerated mass: adenocarcinoma with atypical epithelium at the base of the ulcer in fibrinous and granular tissue.

Conflict of Interest

Authors declared no conflict of interest or financial support.

Authorship Contributions

Diagnosis with CT, Design, Writing the Manuscript and Discussion: Yeliz Aktürk; **Diagnosis with the Doppler Ultrasound, Supervision and Discussion:** Işık Conkbayır; **Diagnosis with the Pathology Specimen, Supervision:** Ünsal Han; **Supervision, Discussion:** Baki Hekimoğlu.

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