Adrenal Hemorrhage as the First Presentation of Hepatocellular Carcinoma

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Abstract

We report a 67-year-old man who presented with sudden onset of pain in the left flank in association with anemia and hypotension. Imaging studies revealed hepatocellular carcinoma (HCC) at the right lobe of the liver with bilateral adrenal metastases and recent hemorrhage in the left adrenal gland. His serology for hepatitis C was positive. Abdominal exploration with left adrenalectomy was performed. The postoperative course of the patient was uneventful and three cycles of transarterial chemoembolization (TACE) were administered. His general condition gradually deteriorated, and he died 6 months after surgery. Spontaneous massive AH due to metastatic HCC is unusual. Considering the high incidence of HCC in Asia, clinicians should be aware of this atypical and fatal presentation.

Key words: Adrenal hemorrhage, Bilateral adrenal metastases, Hepatocellular carcinoma

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Introduction

Hepatocellular carcinoma (HCC) is one of the most aggressive tumors causing frequent intrahepatic metastasis. Extrahepatic metastases of HCC have been reported in patients with advanced-stage intrahepatic tumor (1). The adrenal glands are common organs involved by HCC metastases and represent an incidence of about 10% in an autopsy series and from 1-2.4% in clinical practice (2-4). The adrenal metastasis is usually unilateral and asymptomatic. Adrenal metastasis from HCC has been reported as a presenting symptom in only one case (5). We report a case that presented as adrenal hemorrhage (AH) from metastatic HCC.

Case Report

A 67-year-old man presented with sudden onset of abdominal pain at the left upper quadrant. His past medical history was unremarkable except for excessive alcohol consumption. He denied history of anticoagulant therapy and antiphospholipid syndrome (APS). He was pale with a blood pressure of 80/60 mmHg and pulse rate of 120/min. Hepatomegaly and multiple spider nevi on his chest wall were noted. He had diffuse abdominal pain, predominantly in the left upper quadrant. Laboratory findings disclosed: hemoglobin 2.3 g/dl; serum aspartate aminotransferase 121 U/L (normal: 0-38); alanine aminotransferase 76 U/L (normal: 0-38); alkaline phosphatase 184 U/L (normal: 39-117). His serum α-fetoprotein was elevated, 152.5 U/ml (normal: 0-10) , and hepatitis C infection was confirmed by serology. Coagulograms were within normal range as were adrenal cortical and medullary function (Table 1). Computed tomography (CT) of the abdomen showed retroperitoneal and intra-abdominal fluid. A 6.3×8.6- cm contrast-enhancing mass was shown in segment VIII of the cirrhotic liver (Fig. 1). Bilateral suprarenal masses were also identified, one located on the right, measuring 9.8×11.7×7.1 cm and one on the left, measuring 5.4×6.1×4.6 cm (Fig. 2). His hemodynamic status was restored after adequate fluid replacement and packed cell transfusion. During exploratory surgery, a collection of 3-liter intraperitoneal unclotted blood and a liver mass with bilateral adrenal masses were found. Also noted was a hematoma within the left adrenal gland which re-
Figure 1. Computed tomography (CT) scan on admission showing a mass (M) in segment VIII of the liver with heterogeneous enhancement in the portovenous phase; however the central part of the mass showed no significant enhancement indicating necrosis.

required left adrenalectomy.

Gross specimens from the left adrenal gland revealed multiple dark brown and red friable tissues with ill-defined yellowish cut surface, containing multiple areas of hemorrhage without a capsule. Histological examination of the surgical specimen showed normal adrenal cortical tissues with surrounding fibro-fatty tissue infiltrated with tumor cells. The tumor exhibited predominantly pseudoglandular and trabecular patterns. Bile pigment was observed in the pseudoglandular lumen and canaliculi (Fig. 3). These findings were diagnostic of bilateral adrenal metastases from HCC with recent hemorrhage in the left adrenal gland.

The patient received hydrocortisone during surgery which was then tapered off. His adrenal cortical function was normal at the 1-week follow-up. His postoperative course was uneventful and he received three cycles of transarterial chemoembolization (TACE) for the right hepatic mass and right adrenal metastasis. The liver mass and the metastatic tumor decreased in size and serum α-fetoprotein levels re-
Figure 3. A microscopic examination revealed benign adrenal tissue infiltrating with a tumor. The tumor exhibited predominant pseudoglandular and trabecular patterns. Bile pigment was observed in the pseudoglandular lumen and canalici (H&E, ×200).

Adrenal glands are the second most common organ involved by HCC metastases after the lung (2, 5). This may be related to the rich sinusoidal blood supply. The right adrenal is most often involved while bilateral involvement is uncommon. The route for metastasis is thought to be hematogenous, but there is also a possibility of direct invasion (10). Metastasis is often diagnosed incidentally by routine abdominal imaging. Adrenal insufficiency is rare in patients with adrenal metastasis. The present patient who underwent left adrenalectomy and had a massive right adrenal metastasis still had reasonably normal adrenal cortical function (11). It is thought that at least 90% of the adrenal glands must be destroyed before there is functional loss (12).

AH is rare but needs to be diagnosed since it is likely to be rapidly fatal in cases of bilateral adrenal involvement (13). Although AH is more common after trauma, spontaneous AH is sometimes associated with severe stress such as sepsis, surgery, burn, and shock, and after adrenocorticotropic hormone (ACTH) administration. Other reported causes include hemorrhagic diathesis, such as anticoagulant therapy or APS (14). AH from metastatic cancer such as that originating from the lung, is even less uncommon (15). A sudden abdominal pain in the flank or lower chest concurrent with a drop in hematocrit should raise the suspicion for this condition (13, 14). Typical radiographic findings are hypodense (50-90 Hounsfield Unit, HU) and/or hyperintense mass on the non-contrast adrenal gland CT or T1-weighted magnetic resonance imaging (16). These findings should be differentiated from pheochromocytoma, especially if the enhancing tissue is nodular.

In conclusion, we report a unique case of symptomatic hemorrhagic adrenal metastasis from HCC. Considering the high incidence of HCC in Asia, clinicians should be aware of this atypical and fatal presentation.

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References


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