SPONTANEOUS HEMOPERITONEUM SECONDARY TO RUPTURED METASTASIS OF AN ILEAL CARCINOMA SOLVED BY LEFT LATERAL LIVER RESECTION

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ABSTRACT

Spontaneous ruptures of liver metastases are less reported than those of benign or malignant hepatic tumors. In these cases liver resection is indicated in order to ensure hemostasis and not as a curative procedure. The authors present a 61-year-old patient with ileum carcinoma and multiple liver metastases, admitted for epigastralgia, abdominal distension, asthenia, pallor and significant weight loss. Ultrasound examination showed hepatic metastases in the segments II, III and VIII, of 3, 2 and respectively 3 cm in diameter. The laparotomy revealed a hemoperitoneum secondary to a spontaneous rupture of a liver metastasis from the left lateral lobe. A left lateral liver resection was performed in order to control the hemorrhage and subsequently an ileo-transverso-anastomosis was performed, in order to avoid the partially obstructive ileum tumor. Postoperative recovery was uneventful. In conclusion, liver resection can be performed as a palliative procedure in order to control the hemorrhage secondary to a spontaneous metastasis rupture, and it is considered superior to other haemostatic procedures. Even if tumor dissemination in the peritoneal cavity is possible during the rupture of a metastasis, the aggressive surgical procedure may ensure a natural course of the disease in these patients.

Key words: hepatic metastasis, spontaneous rupture, liver resection

INTRODUCTION

Recent reports describe cases of spontaneous rupture of hepatic metastases from primary sites including lung, kidney, colon, pancreas, testicle, gallbladder, choriocarcinoma and unknown.¹³

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However, hepatic rupture due to metastatic cancer is an uncommon complication compared with spontaneous hemoperitoneum secondary to the rupture of hepatocellular carcinoma (HCC).³⁶ Although the incidence of this complication is higher in emergency units, a study made by Ong et al, in 1972, on spontaneous liver tumor rupture resulting in hemoperitoneum, describes an incidence of almost 15% of the studied cases of HCC.⁷

Surgical procedures are palliative in order to control hemorrhage with reduced hospital mortality. Therefore, liver resection is proved to be a successful and safe procedure in cases of malignant or hemorrhagic tumors, benign tumors, liver trauma or in graft harvesting from the living
Surgical techniques are designed to reduce blood loss, blood transfusion, and ischemic injury to the remnant liver during hepatectomy. In cases with massive hepatic metastases complete resection can not be done by single hepatectomy. In these circumstances "two-stage hepatectomy" can be performed. Also, since emergency surgery carries a high risk of morbidity and mortality, nonsurgical hemostatic procedures can be considered as primary procedures of choice for controlling the bleeding.

The present paper describes the surgical technique and the perioperative management to ensure quick and safe hemostasis in a patient with hemoperitoneum from a spontaneous rupture of a liver metastasis.

CASE REPORT

The paper reports a case of a 61-year-old man presenting with epigastralgia, abdominal distension, asthenia, tegument pallor and a significant weight loss (7 kilograms in 6 months). Physical examination revealed an abdominal rigid tumor in the epigastric area, unpainful, mobile with the superficial layers. Systolic blood pressure was 100 mmHg; pulse, 97 beats/min; WBC count, 5.6x10^3/mm^3; hemoglobin, 10.3g/dL; hematocrit, 31%; total proteins, 84%; ALAT, 76 U/L; ASAT, 72 U/L; total bilirubin, 0.9 mg/dL; direct bilirubin, 0.7mg/dL. Chest X-ray showed left subclavicular calcification, infrahilar low-attenuation and an irregular-shaped mass on the right; large and opaque right hilum; normal transparency of the left lung hilum. Upper gastro-intestinal endoscopy showed a normal esophagus, a congestive antral mucosa and normal bulb. Ultrasound examination revealed a liver with normal dimensions and inhomogeneous structure; a 9/6 cm inhomogeneous and low-attenuation mass was visualized, suggesting liquid content in the left liver lobe corresponding to segment III, and metastases of 2 and 3 cm diameter, corresponding to segments II, III and VIII respectively. Also, ascites was present in a small quantity in the right interhepatorenal space and in the Douglas pouch, with thickened gallbladder walls, common bile duct of normal diameter, normal kidneys, spleen and pancreas.

A decision for palliative surgery was made. A left lateral liver resection was performed in order to control bleeding, followed by an ileotransverso-anastomosis in order to bypass the partially obstructive ileum tumor.

The xipho-subumbilical laparotomy revealed liver steatosis with a 9/6-cm metastasis on the midriff surface of the left hepatic lobe, corresponding to segment III, spontaneous ruptured in the peritoneal cavity with hemoperitoneum (blood without clots in Douglas pouch and in the subhepatic space, almost 300 ml); two metastases of 2 and 3 cm diameter of firm consistency corresponding to segments III respective II, and one metastasis corresponding to segment VIII with a diameter of 3 cm. A partially obstructive tumor was identified in the terminal ileum, 20 cm from the cecum, with multiple adherences to the ileum loops. Mesenteric adenopathy was also present.

The left liver lobe was mobilized by sectioning the round, falciform, coronary and triangular left ligaments and subsequently left hepatic artery section was performed. An II-III bisegmentectomy was decided, using liver pedicle clamping by Pringle technique (2 x 15 min). Ultrasound dissection (CUSA) was used to divide into sections the liver parenchyma and the minor vascular elements were cauterized. The left hepatic vein intercepted during the liver parenchyma dissection was sutured by performing a running suture with Prolene 4.0, followed by the sectioning of the left part the falciform ligament and the portal pedicle. Blood losses were reduced using the “sandwich method”, which proved to be useful especially during the reperfusion periods. Once the parenchyma dissection was done, the hemostasis was completed by cauterizations and ultraaligatures, dressings moistened in hot saline solution placed on the transection surface and fibrin films; finally “mattress type” transfixing “U” stitches were placed. (Fig. 1)

Biopsy of the remnant liver was made from a free tumor surface. (Fig. 2) In order to avoid the ileum tumor, an ileotransversoanastomosis was performed, using an extramucous latero-lateral running anastomosis (Davos stitch) with a double armed PDS 3.0. After the hemostasis was verified the peritoneal cavity was closed without draining. The patient received two units of blood and two units of plasma.
Blood loss during the surgery was estimated at 250 ml.

In the first postoperative day hemoglobin was 9.1 g/dL; WBC count 10⁴/mm³; total protein, 90%; ALAT, 204 U/L; ASAT, 239 U/L; total bilirubin, 2.4 mg/dL; direct bilirubin, 1.9 mg/dL. In the second postoperative day hemoglobin was 11.7 g/dL; WBC count 6.6x10⁴/mm³; total protein, 73%; ALAT, 162 U/L; ASAT, 125 U/L; total bilirubin, 2.6 mg/dL; direct bilirubin, 2.2 mg/dL.

The recovery of the patient was uneventful, with moderate cytolysis and intestinal transit recovery on the third day. (Fig. 3)

DISCUSSIONS

The first major organ reached by venous blood draining from the gastrointestinal tract, the liver, is the most common site for distant metastases from colorectal cancer. The treatment was long accompanied by nihilism and surgical therapy in particular was regarded with great skepticism. Findings like autopsy studies, that noted that the liver is often the sole site of metastases, encouraged the initial attempts of resection of limited liver metastatic disease. Therefore, during the past two decades, a large body of data confirmed that long-term survival can result from resection of hepatic colorectal metastases.

Hemoperitoneum from a spontaneous metastasis rupture is not common, but it is a major, life-threatening complication. Therefore, the proposed surgery is palliative in order to control the hemorrhage quickly and effectively. Liver resection is a procedure that ensures surgical hemostasis, in the presented case without any intraoperative complication and with an uneventful recovery of the patient.

Closing the abdominal cavity without draining was chosen in order to reduce overall operative morbidity, even if subphrenic abscess, bile leak, and hemorrhage are the most common and life-threatening intraperitoneal complications in liver resection. Abdominal drainage has been a routine practice during the last century, and the drain is usually inserted into the subphrenic or subhepatic space close to resection surface after hepatic resection. A comparative study using drainage and a non-drainage group, describes significantly higher overall operative morbidity in the drainage group related to wound complications, more septic complications, and a longer hospitalization period in the drainage group than in the non-drainage group. On the other hand, high quality radiologic imaging and percutaneous radiologically guided drainage can simplify the management of postoperative abdominal collections.

Knowing that the rate of complication during emergency surgery is higher than in elective surgery, non-surgical hemostatic procedures are proposed in order to control bleeding. Taking the patient's quality of life in consideration, recent literature describes arterial embolization as a successful hemostatic procedure used as the primary choice in order to provide enough time for the patient's general condition to stabilize. Also, detecting the metastatic rupture using color Doppler sonography allows an easy and prompt transarterial embolization therapy.
CONCLUSIONS

1. The presented case is an eloquent example of successful liver resection in order to ensure liver hemostasis for a spontaneous metastasis rupture. With an adequate surgical technique, this method provides a hemostasis superior to other hemostatic procedures (right or left liver arterial branch ligature, hemostatic compression, fibrin films etc.), with reduced hospital morbidity and mortality.

2. Considering the patients’ quality of life, major surgical procedures are not contraindicated when tumor cells dissemination in the peritoneal cavity during a liver metastasis rupture is suspected. Therefore, even if aggressive, these procedures can prolong survival in critical patients.

REFERENCES


