

Isolated Left Hepatic Artery Transection In Blunt Abdominal Trauma: Case Report

Künt Abdominal Travmada İzole Sol Hepatik Arter Transeksiyonu:Olgu
SUnumu
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Özet

Künt travma sonrasında porta hepatiste bulunan yapıların yaralanması çok nadir gözlenir, morbiditesi ve mortalitesi yüksek seyreder. Bu yazıda künt travma sonrasında görülen izole sol hepatik arter yaralanması gözlenen olguyu literatür eşliğinde sunmayı amaçladık. 17 yaşında erkek hasta araçı trafık kazası sonrasında Bitlis Devlet hastanesi acil servisine getirilmişti. Yapılan BT anjiyografide sol hepatik arterde psödoanevrizma ve posteriorunda kontrast madde ekstrasvasyonu mevcuttu. Portal ven faz BT'de; sağ hepatik arter açık, sol hepatik arter izlenmiyordu. Sol lobda parankimal hematoma ve kontrastlanmayan laserasyon alanları izlenmekteydi. Hasta acil ameliyata alındı. Eksplozasyonda sol hepatik arterin transekte olduğu gözlemlendi. Hemostazi sağlamak amacıyla sol hepatik arter bağlandı. Künt travma sonrası izole sol hepatik arter transeksiyonu nadiren görülür. Hemodinamik olarak stabil olmayan olgularda arter ligasyonu en sık kullanılan tedavi seçeneğidir.

Anahtar kelimeler: *hepatik arter transeksiyonu, künt travma, hepatik arter yaralanması, karaciğer*

Abstract

Injuries to the anatomic structures of the porta hepatis are rare and have high morbidity and mortality rates. The case is here presented of a patient with isolated left hepatic artery transection after blunt trauma. A 17-year old male was admitted to the Emergency Department of Bitlis State Hospital after a traffic accident. Pseudoaneurysm and extravasation was demonstrated in the left hepatic artery on computed tomography (CT) examination. The left hepatic artery could not be detected in the portal vein phase on CT. Parenchymal hematoma and non-contrasted laceration areas were observed in the left lobe. The patient underwent surgery, and the left hepatic artery was seen to be transected on exploration. To provided hemostasis, the left hepatic artery was ligated. Isolated left hepatic artery transection is rarely seen after blunt trauma. Arterial ligation is the most commonly used treatment option in hemodynamically unstable patients.

Keywords: *hepatic artery transection, blunt trauma, hepatic artery injury, liver trauma*

Introduction

Although injury to the liver is a common finding after blunt abdominal trauma, injuries to the anatomic structures of the porta hepatis are rare and the morbidity and mortality rates of such injuries are high¹. Pseudoaneurysm of the hepatic artery after blunt trauma is a very rare complication, which may cause delayed hemorrhage and hemobilia. Symptoms of hepatic artery pseudoaneurysm may vary from clinical stability to intraperitoneal hemorrhage or gastrointestinal, venous, portal, biliary system rupture². Vascular injuries on the porta may result in hemorrhage and need to be controlled. In extrahepatic arterial injuries, the vessel may also need to be ligated³.

The case is here presented of a patient with isolated left hepatic artery transection seen after blunt trauma, and the findings are discussed in the light of relevant literature.

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Case Report

A 17-year-old male patient was admitted to the Emergency Department of Bitlis State Hospital after a traffic accident. The patient was conscious and co-operative on admission. Blood pressure was 120/70 mmHg, and pulse was 114/min. At the time of admission hemoglobin, AST and ALT values were 13.6 g/dl, 219 U / L and 191 U / L, respectively. Plain pulmonary and abdominal radiographs were normal. Brain CT, cervical spine CT and thorax CT were normal. CT angiography showed a pseudoaneurysm in the left hepatic artery and contrast extravasation in the posterior of the artery (Figure 1A).



Figure 1A

CT angiography showed a pseudoaneurysm in the left hepatic artery and contrast extravasation in the posterior of the artery

On the portal vein phase CT, the right hepatic artery was seen to be normal and the left hepatic artery was not detected. Parenchymal hematoma and non-contrasted laceration areas were observed in the left lobe (Figure 1B).



Figure 1B

Parenchymal hematoma and non-contrasted laceration areas were observed in the left lobe

With the development of hypotension and tachycardia, the patient was admitted for surgery. In the exploration of the abdomen there was found to be hemorrhage of nearly 2 liters of blood and left hepatic artery transection. The left hepatic artery was ligated to provide hemostasis and no other intraabdominal pathology was observed. The patient was stabilized and followed up in the intensive care unit. During the follow-up, the patient had no active drainage, and hemogram monitoring remained stable. On postoperative day 1, the patient was referred to a tertiary level hospital as it was thought that sufficient follow-up of the patient could not be applied in a secondary hospital.

Case Discussion

Many changes have been observed in the follow-up of blunt liver trauma in the last two decades. Non-operative observation is the standard treatment for hemodynamically stable patients with low-grade injuries⁴. Indication for emergent surgery can be considered in hemodynamically unstable patients⁵.

Hepatic artery injury due to blunt trauma is rare, but reported mortality rates in adults are up to 50%^{6,7}. In a review of 118 cases with porta hepatis injury, the hepatic artery was determined to be the least injured structure (23%)⁸. Hepatic artery injury following blunt trauma is often seen as pseudoaneurysm. Occlusion, partial and complete transection are seen less frequently. Severe blood loss occurs when partial or full transection is observed and the patient is hemodynamically unstable. Patients with pseudoaneurysms also do not have apparent clinical symptoms⁶. In the current case, complete transection was observed in the left hepatic artery, the patient was hemodynamically unstable and underwent emergent surgery.

According to the theory of Bunt et al. it has been shown that due to the flexibility of the proper hepatic artery, injuries are more frequent, and due to the fixed structure of the left hepatic artery, injuries to this are rare⁹. In the current case, left hepatic artery transection was observed.

Current treatment options for hepatic artery injuries are listed as repair of the artery with end to end anastomosis,

lateral arteriorraphy, graft interposition, vascular transposition, embolization and endovascular stenting. The hemodynamic status of the patient plays an important role in the treatment plan ⁶. In the majority of patients with hepatic artery injuries, bleeding is controlled by artery ligation. Most patients tolerate hepatic artery ligation without any sequelae, which is possible because of collaterals from the phrenico-abdominal and intercostal arteries ³. In another previous study of 16 patients with hepatic artery injury, 75% were determined to have occurred by blunt trauma and only one case was treated with hepatic artery ligation ⁸. The current patient had unstable hemodynamic status and was stabilised with hepatic artery ligation.

In conclusion, isolated left hepatic artery transection is rarely seen after blunt trauma and can be fatal. Arterial ligation is the most commonly used treatment option in hemodynamically unstable patients.

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