THE CONSERVATIVE TREATMENT OF THE HEPATIC TRAUMA OF THE POLYTRAUMATIZED PATIENT

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Keywords: hepatic trauma, conservative treatment, management *Abstract:* Introduction: The liver is the second important abdominal viscera regarding its frequency in abdominal trauma but at the same time, it represents the main cause of death determined by this kind of lesion. We present the case of a 51 year-old patient, victim of a car accident, for whom the abdominal computed tomography (CT) shows hepatic contusion and hydropneumoperitoneum. Results: During the surgical intervention, we discovered an intrahepatic hematoma, cecum depolisation with complete lining, mesenteric rupture at approximately 150 cm from the Treitz angle, with complete ansa. We decided for a conservative approach regarding the intrahepatic hematoma, practicing enterorrhaphy, mesenteriorrhaphy, cecorrhaphy, epiploon segmentectomy and multiple abdominal drainage. Conclusions: The nonoperational management of the hemodynamically stable patients with hepatic trauma is becoming a standard conduct in trauma services.

Cuvinte cheie: traumatism hepatic, tratament conservativ, management **Rezumat:** Introducere: Ficatul este al doilea viscer abdominal interesat ca frecvență în cursul traumatismelor abdominale, dar în același timp reprezintă și principala cauză de mortalitate prin acest tip de leziuni. Prezentăm cazul unei paciente în vârstă de 51 de ani, victima unui accident rutier, la care, CT abdominal relevă contuzie hepatică și hidro-pneumo-peritoneu. Rezultate: Se intervine chirurgical și intraoperator se constată hematom intrahepatic, depolisare la nivelul cecului cu mucoasa integra, ruptură de mezenter la aproximativ 150 cm de unghiul Treitz, cu integritatea ansei. Se decide o atitudine conservativă în ce privește hematomul intrahepatic și se practică enterorafie, mezenterorafie, cecorafie, rezecție segmentară de epiplon, drenaj abdominal multiplu. Concluzii: Managementul nonoperativ al pacienților traumatizați hepatic stabili hemodinamic a devenit astăzi un standard al conduitei în serviciile de traumatologie.

INTRODUCTION

The liver is the second important abdominal viscera regarding its frequency in abdominal trauma, but at the same time, it represents the main cause of death determined by this kind of lesion. Moreover, in 74% of the cases, the hepatic lesions are associated with other thoracic or diaphragm lesions. Among these, the most frequent are liver-spleen lesions (45% of the cases), associated costal lesions (33% of the cases), while lesions of the duodenum and pancreas are more frequently associated with lesions of the left lobe of the liver.(1,2)

Nowadays, the highest accepted classification of hepatic lesions is the New Liver Injury Scale, proposed by the American Association for the Surgery of Trauma (AAST). It is based on images obtained by a helical CT, the hepatic lesions being ranked in 6 classes based on the importance of the parenchymal destruction.(4)

Today, this is the most popular classification used for establishing different therapeutic protocols, varying from the conservative approach to immediate surgical intervention. This classification is the main prediction factor regarding the necessity of an emergency surgery, as the patients who require a laparatomy for this, present high risk.(16)

Consequently, CT scan is mandatory for all patients with abdominal trauma and suspected liver lesions (3) except the asymptomatic cases for which the temporization is possible.(5) Hemodynamically unstable patients require immediate surgery but even in these cases, current studies recommend limited interventions, with reduced operational impact.

Nonoperational management of hemodynamically stable patients with hepatic trauma is becoming a standard conduct in trauma services.

CASE STUDY							
Exposing	a	case	of	hepatic	trauma	for	a
polytraumatized patie	nt.						

51 year old female patient, HM, is transferred to the surgery clinic from Orastie hospital, 12 hours after being injured in a car accident. Upon hospitalization, the patient presents diffuse abdominal pain prevailing at the level of the right hypochondrium, without signs of peritoneal irritation, presence of pain on palpation of the basin and the right hemithorax, hemodynamically stable (TA=120/80 mmHg, P=80 B/min) and respiratory.

The abdominal ultrasound, carried out at 7:00 AM, highlights a homogenous liver with an area slightly echogenous, non-uniform, vaguely delimited, of approximately 45 mm in the right lobe, without intraperitoneal fluid retention at the moment of the examination (see figure no. 1).

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Figure no. 1. Abdominal ultrasound examination upon hospitalization



The thoraco-abdominal CT examination taken on the same day at 11:15 AM, shows a non-iodophil hypodensity with anfractuous contour localized in the 6th LDH segment, a minimum quantity of perihepatic ascitic fluid and a greater quantity in the rectouterine pouch, ascitic fluid with para-fluid densities, comminuted fracture of the left inferior ischiopubic ramus, fracture of the left superior ischiopubic ramus.

Figure no. 2. Thoraco-abdominal CT examination upon hospitalization



The patient is monitored under conservative treatment tracking the dynamics of the biological invariants and clinical arterial tension and symptomatic values. The ultrasounds taken upon hospitalization do not present any important modifications over time.

24 hours after hospitalization, the clinical exam highlights an increase of the abdominal pains and signs of peritoneal irritation with slight volume relaxation of the abdomen, with muscular defence. An abdominal CT is taken which reveals hydropneumoperitoneum, perihepatic and perisplenic fluid retention, in the omental bursa, in Morrison's pouch, in both paracolic gutters and in the rectouterine pouch. The 5th and 6th segments of the LHD level of the liver present vague ill-defined hypodense areas, hypocaptation in arterial and portal time resembling hepatic contusion, costal fractures CVII and CVIII right axillary line and CIX right anterior arch.

Surgical intervention is decided and during the operation, approximately 1500 ml of peritoneal fluid is observed, as well as false membranes at the level of the intestinal ansae and of the epiploon, necrosis of the epiploon blocked in rectouterine pouch. Lesions are found at approximately 70 cm and 100 cm from the Treitz angle involving the lumen of the intestinal ansa, cecum depolisation with complete lining, mesenteric rupture at approximately 150

cm from the Treitz angle, with complete ansa, without effraction of the intrahepatic hematoma.

The following surgical fixations are performed: enterorrhaphy, mesenteriorrhaphy, cecorrhaphy, epiploon segmentectomy and multiple abdominal drainages. All these interventions support a conservative approach regarding the intrahepatic hematoma.

Postoperative evolution is favourable, with resumption of the intestinal transit and alimentation and gradual removal of the drainage tubes starting day 4. The abdominal CT taken on the 8^{th} day after the surgery shows hypodensity in the band with arborescent ramifications, weakly iodophil in the 5^{th} , 6^{th} and 7^{th} LHD segments, permeable portal and suprahepatic branches without blood extravasation in the hepatic laceration solution.

The patient is released from hospital 21 days after the operation.

DISCUSSIONS

The local clinical exam can highlight abdominal sensitivity of variable intensity, in the context of a moderately relaxed abdomen, or it can show clear signs of acute peritonitis, especially if extrahepatic abdominal lesions are associated. Moreover, full examination of the patient targets the identification of all associated lesions (at skull, thorax, basin or limb level), as well as a classification of these.

The paraclinical diagnosis of the hepatic lesions requires an abdominal ultrasound which usually represents the first exploration performed by the emergency service on the abdominal traumatized patient, as this exploration can be done quickly, both in the emergency room and in the surgery room. Nowadays, it is considered that the sensitivity of the method in these situations approximates 98% for third and above degree hepatic lesions. The CT, especially the helical CT, is today the exploration of choice in hepatic trauma. The method allows the proper evaluation of the hepatic lesions and classifications of these according to the AAST taxonomy. Assuming a conservative approach, several clinical, biological and paraclinical elements are essential.

Consequently, the most important problem, immediately upon hospitalization or after the resuscitation of the patient, is to decide upon a surgical intervention. The determinant factors for this decision are the gravity of the lesions found during the CT exam (6,7) and also the hemodynamic status of the patient.

Admittedly, the conservative approach represented a major progress in the treatment of the polytraumatized patient with hepatic lesions. The particularity of the case presented in this paper resides in the fact that, although the associated abdominal lesions required surgical interventions, the hepatic trauma was treated conservatively.

CONCLUSION

Currently, it is considered as a standard procedure that patients with lesions of degree 1, 2 and 3, hemodynamically stable and without signs of acute peritonitis will benefit from the non-surgical treatment with very good results.

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