Lesión Hepatic injury associated with massive hemoperitoneum secondary to trauma, case report

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Abstract

Case description: 23-year-old patient with abdominal hemorrhage of unclear origin, who subsequently presented hemodynamic instability, requiring surgical management on three occasions with satisfactory evolution.

Clinical findings: she presented quantified bleeding of 5500 cc in the abdominal cavity (grade IV-ATLS classification) with hepatic lesions in segments I, IV and VIII, without findings suggestive of trauma on physical examination, or other internal traumatic findings.

Treatment and results: An early surgical intervention was performed by exploratory laparotomy with findings already described, in addition to two additional surgical procedures that led to control of bleeding, with satisfactory evolution.

Clinical relevance: Abdominal bleeding and solid viscus laceration secondary to blunt abdominal trauma is a common etiology in young male patients, contrary to this statement, bleeding of hepatic origin without trauma is an uncommon etiology. The present case turns out to be a diagnostic difficulty in terms of etiology, since the findings of the surgical exploration does not agree with the external physical examination, without a clear clinical history at admission, the question of the cause is left unanswered.

Keywords: Hemoperitoneum, Laparotomy, Liver, Hemorrhagic Shock, Case report. (MeSH)

Resumen

Descripción del caso: Paciente de 23 años con hemorragia abdominal de origen no claro, que posteriormente presenta inestabilidad hemodinámica, requiriendo manejo quirúrgico en tres ocasiones con evolución satisfactoria.

Hallazgos clínicos: Presentó sangrado cuantificado de 5500 cc en cavidad abdominal (grado IV - clasificación ATLS) con lesiones hepáticas en los segmentos I, IV y VIII, sin hallazgos sugestivos de trauma al examen físico, ni otros hallazgos traumáticos internos.

Tratamiento y resultados: Se llevó a cabo una intervención quirúrgica precoz mediante laparotomía exploratoria con hallazgos ya descritos, además de dos tiempos quirúrgicos adicionales que llevaron al control del sangrado, con evolución satisfactoria.

Relevancia clínica: El sangrado abdominal y laceración de víscera sólida secundario a trauma cerrado de abdomen es una etiología común en pacientes jóvenes masculinos, siendo contrario a esta afirmación el sangrado de origen hepático sin trauma es una etiología poco común. El presente caso resulta ser una dificultad diagnóstica en cuanto a la etiología, ya que lo evidenciado en la exploración quirúrgica no concuerda con el examen físico externo, sin una historia clínica clara al ingreso se deja la interrogante de la causa.

Palabras clave: hemoperitoneo, laparotomía, hígado, choque hemorrágico, informe de caso (DeCS).

Introduction

Hepatic bleeding secondary to blunt abdominal trauma continues to be a challenge for surgeons. The literature reports a higher prevalence in the male population, being associated with thoracic and splenic trauma (1), in addition to being more prevalent in open trauma than in closed abdominal trauma (2); other studies report a percentage of 5% of all emergency consultations (3). Within the characterization of these injuries, the AAST (American Association for the Surgery of Trauma) classification tool is used (4), which provides a prognostic factor and therapeutic approach to liver injuries.

Spontaneous hepatic rupture is a rare etiology, which is associated with different etiologies such as pseudoaneurysms, coagulation disorders and tumors (5,6). On the other hand, hepatic bleeding associated with trauma, early diagnosis, and timely intervention play an important role in patient survival. In cases where the etiology is in doubt, abdominal computed tomography is the fundamental diagnostic aid, as well as the initial ultrasound scan. Selective embolization will be the first line management in these cases (7,8).

Ethical considerations

The authors declare that this article contains no personally identifiable information and that written informed consent was obtained from the patient for the publication of this case report and the images that appear in it. In addition to requesting permission from the institution that provided the health care service (Clínica Los Nevados, Pereira, Colombia).

Case description

23-year-old patient with a history of psychoactive substance use (2CB - 4-bromo-2,5-dimethoxyphenylethylamine), admitted for an apparent traffic accident on a motorcycle mentioned by companions, but later denied by the patient. Physical examination showed no superficial lesions, no skin alterations, no direct signs of trauma. On admission he presented Glasgow 5/15, bilateral nonreactive mydriasis, abdomen soft to palpation, slightly distended, peripheral pulses present with low amplitudes, with heart rate of 170 beats per minute, evidencing in the electrocardiogram a supraventricular tachycardia requiring electrical cardioversion on two occasions without recovering sinus rhythm, additionally with arterial hypotension that did not respond to hydric therapy and therefore required vasopressor support such as norepinephrine at low doses.

Subsequently, the patient was in the intensive care unit, with torpid evolution, with dual vasopressor (norepinephrine-vasopressin), in multifactorial sinus tachycardia rhythm, dependent on ventilatory support, under the effects of sedation-analgesia, Rass 0 to -1(9), abdomen slightly painful on palpation, slightly distended, positive peristalsis. A POCUS type ultrasound study was performed (10), with evidence of free fluid in the cavity, so he was taken to abdominal tomography with evidence of severe liver injury secondary to trauma and large amount of free fluid in the cavity.

In view of the findings, the patient was immediately taken to exploratory laparotomy, finding hemoperitoneum of approximately 3000 cc, in addition to a grade III hepatic lesion (AAST classification) (4), of segment I with extension to IV and VIII, abundant bleeding in the hepatic bed of difficult control requiring the performance of the Pringle maneuver for 7 minutes (11), placement of stitches over the lesion with partial control, total estimated blood loss of 5500 cc was quantified, In addition to intraoperative requirement of massive transfusion of hemocomponents, antifibrinolytic and dual vasopressor requirement at maximum dose. Due to the partial control of bleeding, it was decided to leave the patient packed with 5 compresses and IV bag fixed to the skin.

Subsequently, the patient was transferred to the intensive care unit, with improvement of hemodynamic status, no signs of hypovolemia, hemoglobin and coagulogram after surgery in goals, and a blood count of 1.5.

In the second surgery, in exploratory laparotomy and extraction of compresses, hemoperitoneum of 600cc was found, with persistent bleeding in segment 1 of the liver, so it is packed again with 3 compresses and 1 suprahepatic, leaving the abdomen in laparotomy, subfascial IV bag and skin closure. He was transferred again to the intensive care unit to be taken again for revision in 48 hours.

Finally, the patient is taken to a third surgical stage. In exploratory laparotomy and extraction of compresses, no further bleeding or biliary or gastrointestinal leaks were evidenced. Therefore, the last lavage and definitive closure was performed.

Discussion

During the clinical case report, there was no clarity of etiology in relation to the intraoperative findings found with the data provided by the patient and accompanying people, as well as with the findings on physical examination. The exposed literature shows that due to epidemiology, traumas in young male patients are more common (1), but given the findings found in the physical examination and the poor quality of the information provided, the theory of trauma may enter into doubt since there are other pathologies that can cause these events (5,6), which is why it is important to present this case.

Regarding the initial management, the patient presents clear signs of hemodynamic instability associated with signs of peritoneal irritation that are difficult to determine due to the patient's level of sedation. Therefore, the approach is indicated with exploratory ultrasound, obtaining a positive result and confirming the diagnosis with tomography images (12-15).

Exploratory surgical management is necessary with a diagnostic and damage control objective, which was implemented in this case with a satisfactory evolution (12). But confronting the literature, new non-surgical therapeutic strategies are evidenced, such as selective embolization (8), which could be limited in this case due to the lack of resources at the time, in addition to the characteristics of the exposed lesion which could not be intervened in this way.

Conclusion

Closed abdominal trauma continues to be a common pathology in the young male population. An early diagnostic and therapeutic approach is decisive in the outcome of patients, in cases such as the one described above where there is little information about the mechanism of trauma and physical examination findings cast doubt on the etiology, the expertise of health personnel plays an important role, as well as the availability of diagnostic images such as focused ultrasonography in emergency situations or abdominal tomography which help to clarify the case and take action in this regard. These diagnostic methods are increasingly available in high and medium complexity healthcare centers or in specialized trauma centers, but they are still lacking in rural areas and far from the main cities. Although they are a great help in clarifying the case, when faced with clear signs of hemodynamic instability and suspicion of abdominal trauma, exploratory laparotomy continues to be the most common diagnostic and therapeutic method used in our environment, despite the new less invasive therapeutic strategies such as selective embolization where satisfactory results have been obtained, but due to the lack of resources, it limits the range of management possibilities.

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