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Case Report Open Access

Bilhemia: A Rare Complication of Hepatic Blunt Trauma, Non Interventional Management and Present Aspect

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Abstract

Bilhemia, defined as the passage of bile into the bloodstream through a bile duct-venous system fistula, is a rare complication after liver blunt trauma. We report here the case of a 20 year-old patient who presented with a liver blunt trauma complicated with bilhemia in who hemodynamic stability enabled non-surgical management.

Introduction

Bilhemia, defined as the passage of bile into the bloodstream through a bile duct-venous system fistula, is a rare complication after liver blunt trauma. In the very few reported cases, patients presented with hemodynamic instability, thus precluding non-invasive treatment [1-7]. Because of its rarity, the optimal management of bilhemia on hemodynamical stable patients is not consensual [8]. We report here the case of a 20 year-old patient who presented with a liver blunt trauma complicated with bilhemia in who hemodynamic stability enabled non-surgical management.

Case Report

A 20 year old man was admitted in our institution after an accidental fall from a 3-meters high roof. He presented with hemodynamic stability, Glascow Coma Score of 7. The initial check-up, including a body computed tomography scan (CT-scan), showed a liver blunt trauma with parenchymal disruption involving between 25 and 40% of the right hepatic lobe, grade IV of the American association for the surgery of trauma liver injury scale [9] (Figure 1). In addition, femur and acetabulum fracture were diagnosed, as well as a left pneumothorax. He was hospitalised in intensive care unit for monitoring after the pneumothorax drainage and orthopedic surgery.

Figure 1: CT at arrival.

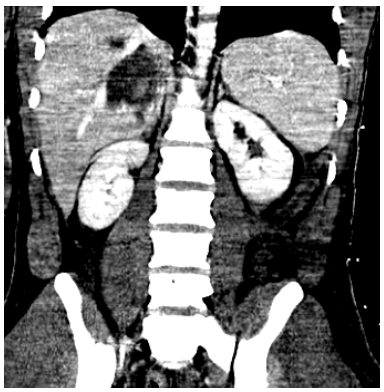

Figure 2: CT after3 days.

Three days later, he presented with jaundice, associated with a rapid and isolated increase of the bilirubin (40 times the upper limit of normal) without elevation of alkaline phosphatase and gamma-glutamyl transferase (Table 1). A second liver CT-scan was performed and showed a bilioma at the junction of liver segments 7 and 8, surrounding the right hepatic vein (Figure 2).

Ahead of this important and isolated elevation of bilirubin, a passage of the bile to the bloodstream through the right hepatic vein was hypothesised [2]. As the patient was hemodynamically stable, a conservative treatment was decided. No biliary opacification was performed in order to avoid bile infection. Blood bilirubin progressively

	Normal value	Admission	Day 6	Day 8	3 Weeks	4 Months
Total bilirubin	2-17	11 µmol/l	164 µmol/l	436 µmol/l	47 µmol/l	27 µmol/l
Conjugated bilirubin	0-7		144 µmol/l	356µmol/l	24 µmol/l	8 µmol/l
Alanine aminotransferase	15-40	284 UI/l	79 UI/l	130 UI/l	53 UI/l	21 UI/l
Aspartate aminotransferase	15-40	428 UI/l	60 UI/l	143 UI/l	36 UI/l	17 UI/l
Gamma-glutamyl transferase	8-60	25 UI/L	104 UI/L	188 UI/L	51 UI/L	22 UI/L
Alkaline phosphatase	40-120	66 UI/l	92 UI/l	145 UI/l	434 UI/l	63 UI/l

Table 1: Blood analysis profile.

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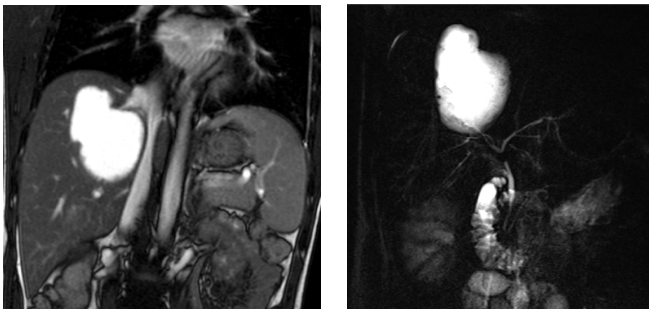

Figure 3 (a and b): MRI after one week

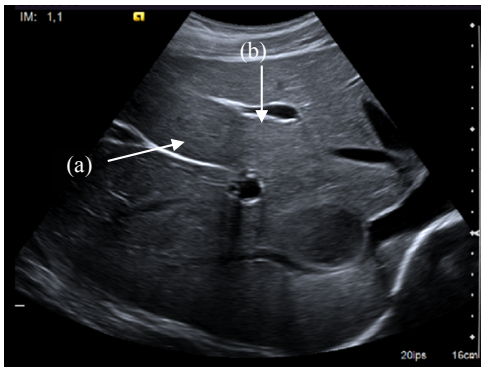

Figure 4: Ultrasound after 4 months. (a) residual biloma diameter=3.8 cm, (b) right hepatic vein.

decreased from day 6 and returned to normal after three weeks. The patient was discharged from intensive care unit after one week, the MRI after one week showed the bilioma (Figure 3). And he went back home after one more week. The ultraosonography after 4 months showed a persistant small bilioma without evidence of communication to the right hepatic vein (Figure 4).

Discussion

The pressure in physiological conditions is, 100 mmHg in the mean hepatic artery, from 0-5 mmHg in the hepatic vein (portal or hepatic) and may rise intermittently to 27 mmHg in the bile duct due to Oddi's sphincter contractions [1,8]. Due to the pressure gradient if a communication is formed between an artery and a bile duct, hemobilia occurs, conversely, if a fistula occurs between a vein and a bile duct,bilhemia occurs [2,3,8]. Bilhemia results to a rapid increase of bilirubin without any other disturbance of the other hepatic biological parameters. Since the flow of bile through the biliary fistula is often slow, the fistula may close spontaneously and may even never be diagnosed [10].

In the present case, the rupture of the right hepatic lateral segment probably damaged bile duct and vein, leading to the formation of a bilioma communicating with the right hepatic vein. Bile draining into this cavity passed into the venous system due to the pressure gradient and resulted in a rapid increase of bilirubin levels in this patient without any other liver biological modification. To our minds, as it has been already described those biological modifications associated with a bilioma surrounding an hepatic vein was highly suggestive of bilhemia consecutive to a bilio-venous fistula [2].

A review of the literature reported only 50 cases of bilhemia in adults with a lethality rate near 50% [4]. Due to the few numbers of cases described, there is no consensus regarding how bilio-venous fistula should be treated and the proposed strategies are varied. Some authors have reported the use of endoscopic sphincterotomy and retrograde stent placement at the location of the fistula, to plug the hole and decrease the bile pressure in order to avoid its passage onto the bloodstream [5,6]. Percutaneous transhepatic drainage with continuous suction of the bilioma have also been proposed [11]. At last others authors described partial liver resection, T-tube drainage of the common bile duct, and suture of the fistula [2] or occlusion of the fistula during angiography [7].

In the present case, the good patient condition and hemodynamic stability encouraged us to favor a conservative therapy, leading to the spontaneous closure of the fistula.

Conclusion

Bilhemia consecutive to bilio-venous fistula is a very uncommon condition. Due to its rareness, only few cases have been reported. Although no consensus exists regarding its treatment, it may depend on the hemodynamic status and patient's comorbidities. We report here that a conservative therapy can be a safe option when the patient is in good condition. Defining decision criteria between conservative, endoscopic and surgical treatments should be of interest.

References

1. Haberlik A, Cendron M, Sauer H (1992) Biliovenous fistula in children after blunt liver trauma: proposal for a simple surgical treatment. J Pediatr Surg 27: 1203-1206.
2. Glaser K, Wetscher G, Pointner R, Schwab G, Tschmelitsch J, et al. (1994) Traumatic bilhemia. Surgery 116: 24-27.
3. Turk E, Temir ZG, Karkiner A, Memis A, Topalak O, et al. (2010) Bilhemia, an unusual complication after blunt liver trauma in a child: case report and review of the literature. Eur J Pediatr Surg 20: 212-214.
4. Sandblom P, Jakobsson B, Lindgren H, Lunderquist A (2000) Fatal bilhemia. Surgery 127: 354-357.
5. Gable DR, Allen JW, Harrell DJ, Carrillo EH (1997) Endoscopic treatment of posttraumatic "bilhemia": case report. J Trauma 43: 534-536.
6. Hommes M, Kazemier G, van Dijk LC, van Dijk L, Kuipers EJ, et al. (2009) Complex liver trauma with bilhemia treated with perihepatic packing and endovascular stent in the vena cava. J Trauma 67: E51-E53.
7. Struyven J, Cremer M, Pirson P, Jeanty P, Jeanmart J (1982) Posttraumatic Bilhemia: diagnosis and catheter therapy. AJR Am J Roentgenol 138: 746-747.
8. Singh V, Narasimhan KL, Verma GR, Singh G (2007) Endoscopic management of traumatic hepatobiliary injuries. J Gastroenterol Hepatol 22: 1205-1209.
9. Moore EE, Cogbill TH, Jurkovich GJ, Shackford SR, Malangoni MA, et al. (1994) Organ injury scaling: spleen and liver (1994 revision). J Trauma 38: 323-324.
10. Koehler LS, Christides PS, Adamec TA (1978) A complication of percutaneous cholangiography resulting in hypoxia and death of an anesthetized patient. Anesthesiology 49: 210-212.
11. Enneker C, Berens JP (1978) Most severe liver rupture with hepatic vein avulsion and massive hemobilia. Chirurg 49: 311-314.