

Right Side Chest Stab Wound with Perforation in Diaphragm and Liver Laceration: A Case Report

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<p>Abstract: Liver is one of the organs with the highest injury rate, and in recent decades, the guidelines for the treatment of liver trauma have changed considerably. Now, there is a growing consensus that the most important step is diagnosis and depending upon the degree of severity, non-operative therapy is the main treatment method for hepatic trauma if conditions permit. For serious hepatic trauma patients such as those with hemodynamic instability, they should be operated upon as soon as possible. Regardless of the surgical options, doctors should control damage to patients and try to prevent complications. New therapies such as hepatic artery Embolization and liver transplantation. Our case was a 24 years old man with right chest penetrating wound by stab that perforated diaphragm and lacerated liver that both of them was repaired. Management of liver trauma is multidisciplinary. Diaphragmatic injury may be underestimated due to the presence of concomitant lesions of other organs, to a state of shock and respiratory failure, and to the difficulty of identifying diaphragmatic injuries in the absence of high sensitivity and specific diagnostic instruments.</p> <p>Keywords: Liver trauma, stab wound, Surgery, Diaphragmatic injury, Penetrating abdominal trauma, Diaphragmatic repair, Liver laceration.</p>	<p>Case Report</p>
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BACKGROUND

Liver is a solid organ with the highest injury rate in abdominal injury [1]. Approximately 15%–20% of abdominal injuries refer to hepatic trauma. Hepatic injury takes the third place in abdominal injury and 80%–90% of hepatic injuries are blunt ones [2]. In 2013, a study using Ultrasonography to evaluate the Intraoperative trauma showed that liver was the mostly affected organ and younger people were more vulnerable to hepatic and pancreatic injury [3]. Diaphragmatic injuries are rare consequences of Thoracoabdominal trauma and they often occur in association with multi organ injuries. The diaphragm is a difficult anatomical structure to study with common imaging instruments due

to its physiological movement. Thus, diaphragmatic injuries can often be misunderstood and diagnosed only during surgical procedures. Diagnostic delay results in a high rate of mortality [4]. Every stab wound should be noticed and explored under anesthesia because you do not know what is behind of this wound.

CASE PRESENTATION

Our case was a 24 years old man with right chest penetrating wound by stab. Her examination show decrease pulmonary sound unilateral and he bring to operation room, chest tube was located and laceration was explored and we find diaphragmatic injury and then hepatic laceration.

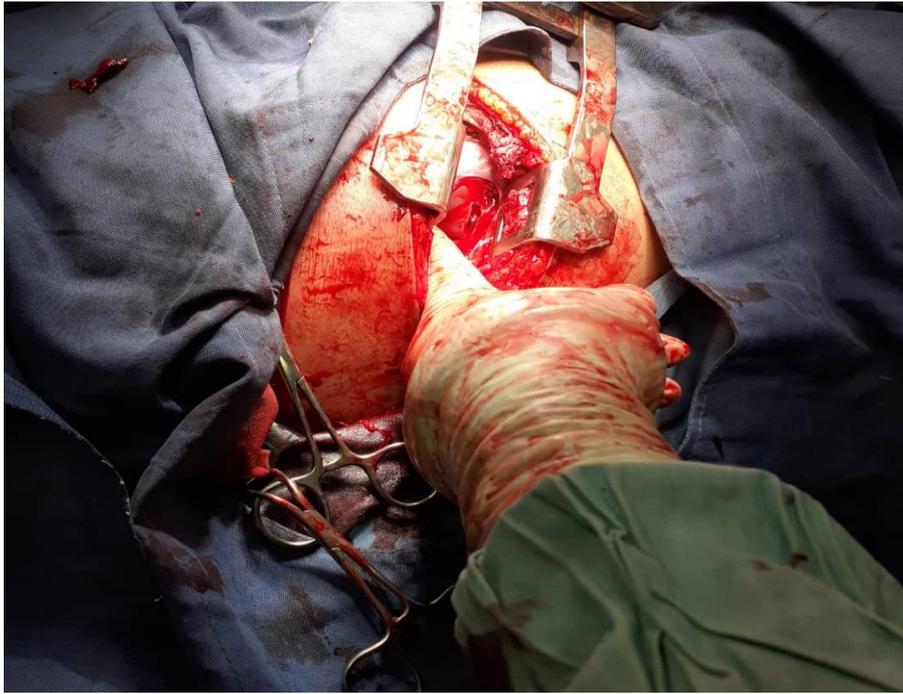


Figure 1: Exploration of wound

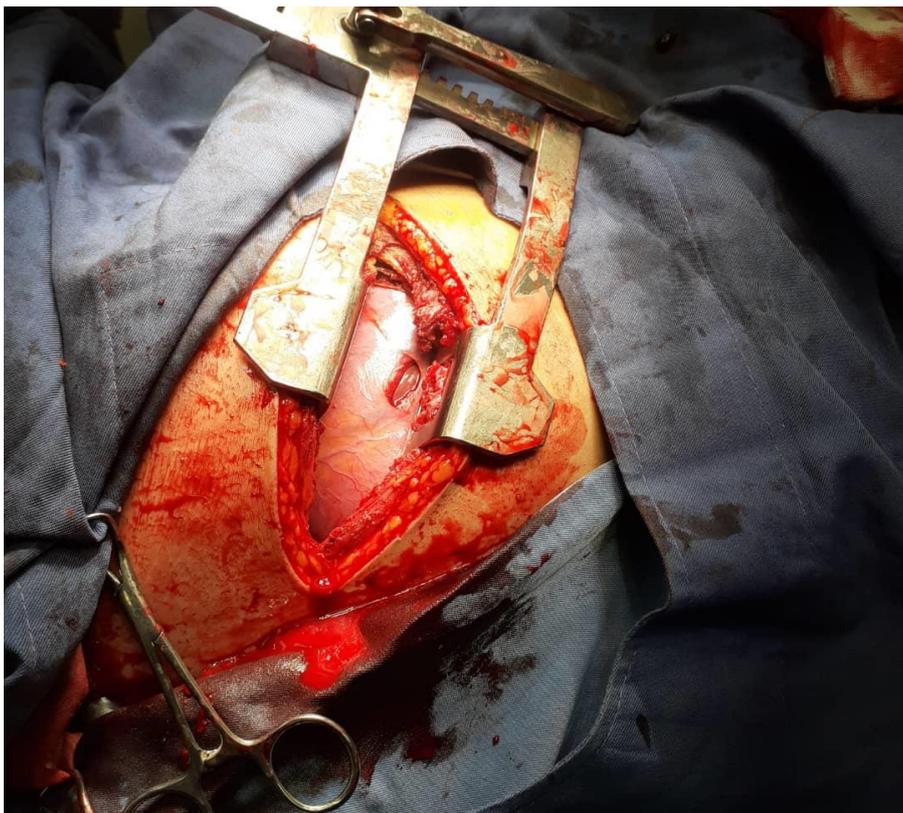


Figure 2: Diaphragm injury

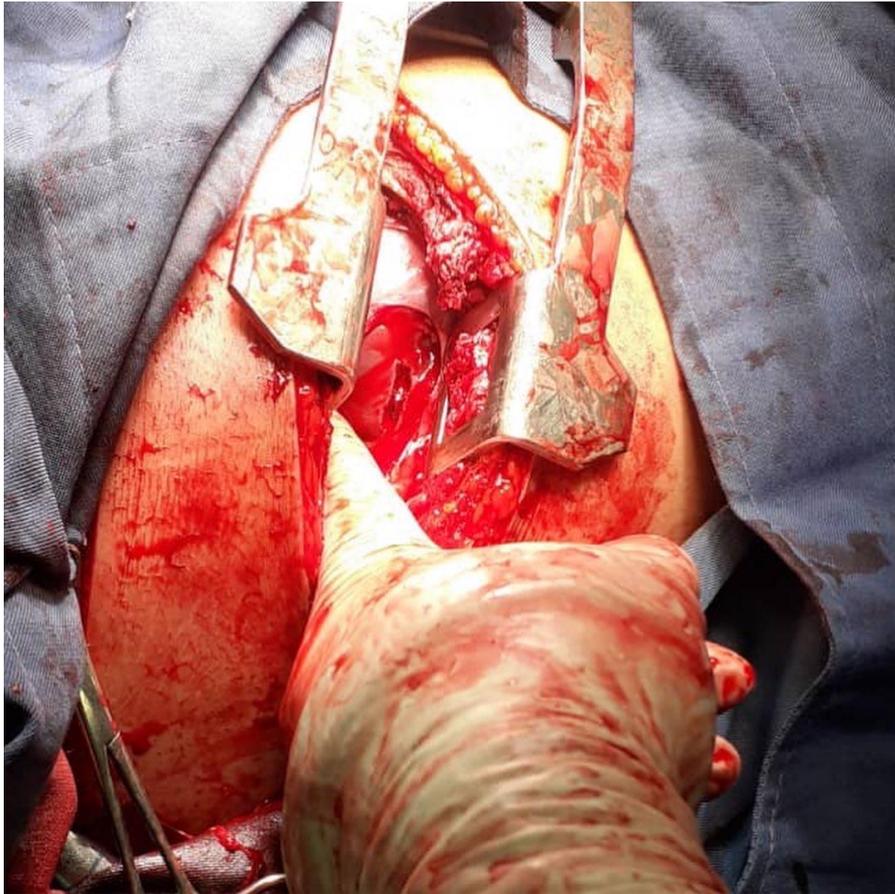


Figure 3: Hepatic injury

We repair liver, then diaphragm and thorax. We locate a chest tube in right hemithorax. After 5 days we can discharge patient with normal pulmonary function.

CONCLUSION

At present, hepatic trauma is mainly managed by non-operative therapy in clinic. Serious hepatic trauma patients whose effective liquid recovery is still accompanied by hemodynamic instability require surgical intervention. The basic principle of operation is to control the trauma and choose the optimal operative method according to the general condition informed by surgical exploration. Meanwhile, surgeons' experiences and technical skill have great influence on the prognosis of the patients [5]. Mandatory late follow-up imaging is not indicated, and it should be used only if the patient's clinical condition and/or symptoms indicating a complication require it for diagnosis. The majority of liver lesions heal in about 4 months [5, 6]. During the recovery phase, patients should be encouraged to not remain alone for long periods and to return immediately to the hospital in case of increasing abdominal pain, lightheadedness, nausea, or vomiting [6, 8].

Management of liver trauma is multidisciplinary. When feasible, non-operative management should always be considered as the first option in adult and in the pediatric populations. For this

reason, clinical condition, anatomical injury grade, and associated injuries should be considered together in deciding the best treatment option [9]. In countries with a low incidence of inter-personal violence, stab wound diaphragmatic injury is particularly rare, in particular involving the right hemidiaphragm. Diaphragmatic injury may be underestimated due to the presence of concomitant lesions of other organs, to a state of shock and respiratory failure, and to the difficulty of identifying

Diaphragmatic injuries in the absence of high sensitivity and specific diagnostic instruments. Diagnostic delay causes high mortality with these traumas with insidious symptoms. A diaphragmatic injury should be suspected in the presence of a clinical picture which includes hemothorax, hemoperitoneum, anemia and the presence of subdiaphragmatic air in the abdomen [4]. In hemodynamically stable patients with penetrating injury of the abdomen in which there is a strong clinical suspicion of diaphragmatic hernia, laparoscopy is indicated as, in addition to having a diagnostic role [10, 11].

Declarations:

Ethical Approval and Consent to participate:

The content of this manuscript are in accordance with the declaration of Helsinki for Ethics. No committee approval was required. Oral and written consent to participate was granted by the parents.

Consent for Publication:

“Written informed consent was obtained from the patient's legal guardian for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.”

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Ahmad Reza Shahraki was the surgeon of patient and writes this paper.

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