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Fatal Event of the Gallbladder Rupture Following the Blunt Abdominal Trauma: A Case Report

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ABSTRACT

The gallbladder traumatic injury rarely happens due to its anatomical location and includes 2%-5% of trauma cases. The diagnoses of isolated gallbladder rupture in the blunt abdominal trauma are usually delayed and mostly revealed during the surgeries. To diagnose gallbladder injuries, the probability of injury in an organ such as gallbladder in the blunt abdominal trauma should be considered and accordingly the detailed diagnostic method should be used. A 85-year-old female was referred to the hospital due to facial and abdominal trauma. There was a mild tenderness in the right upper quadrant (RUQ) area. The hydrops gallbladder was observed in the focused assessment with sonography. The patient was assessed by abdominal ultrasonography after 48 hours and reports liver extensive rupture and sub-capsular hematoma. The patient was assessed by abdominal ultrasonography after 48 hours and reports liver extensive rupture and sub-capsular hematoma. The following day, the patient had severe bradycardia and finally dead due to asystole and cardiac arrest. In autopsy, the gallbladder rupture caused the green purulent bile discharge released over the abdomen. The current paper reports a case on isolated gallbladder injury following the blunt abdominal trauma which was not diagnosed in post-traumatic evaluations and was revealed by autopsy after patient's death. The best method to diagnose gallbladder injuries is the computed tomography (CT) of the abdomen.

Key words: Fatal, Gallbladder, Rupture, Blunt Abdominal.

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1. INTRODUCTION

The gallbladder traumatic injury rarely happens due to its anatomical location and includes 2%-5% of trauma cases (1). Some of the complications of blunt gallbladder injury are including traumatic cholecystitis, gallstone formation (2). Gallbladder injuries usually occur due to severe compression trauma, mostly in car accidents (3). Liver and spleen traumas are studied more than other visceral organs (4). Moreover, gallbladder injury is usually accompanied by other intra-abdominal injuries principally those involving the liver or spleen (5). Also, the diagnosis of isolated gallbladder rupture in the blunt abdominal trauma are usually delayed and mostly revealed during the surgery (6). The reason for difficult diagnosis is gallbladders' anatomic location because it is covered by liver and ribs (7). The current paper reports a case on isolated gallbladder injury following the blunt abdominal trauma which had not been diagnosed in post-

traumatic evaluations and was revealed by autopsy after patient's death.

2. CASE PRESENTATION

A 85-year-old female who was riding as a rear-seat passenger of a car was referred to the hospital on 11 Aug 2015 following the car accident on the same day. She was referred to a teaching university hospital by the emergency medical services due to facial and abdominal trauma. The level of consciousness was 14-15 based on Glasgow coma scale (GCS), systolic and diastolic blood pressure ranges were 14 and 8 mm/Hg respectively and the heart beat rate was 98/minute. No respiratory distress was reported and her organs had full and symmetric pulse, without fractures and pain. There was a mild tenderness in the right upper quadrant (RUQ) area. The hydrops gallbladder was observed in the focused assessment with sonography for trauma (FAST) and no symptom of spleen and kidney

injuries, free-liquid in the Morrison and splenorenal spaces was reported. The subsequent tongue laceration caused by collision of teeth and tongue which was treated on an outpatient basis. During the treatment, the patient experienced bradycardia (40 beats per second) and hypotension. For more examination, the patient was assessed by abdominal ultrasonography after 48 hours and reports liver extensive rupture and sub-capsular hematoma. The following day, the patient had severe bradycardia (35 beats per second) and finally dead due to asystole and cardiac arrest. In autopsies, an old scar in midline from navel to pubic and multiple bruises on arms and left forearm, elbow, back of right hand and the left ankle were

being absorbed. Minimal accumulation of liquid was reported in pleural cavity. Both lungs were anthracnose which contain edema fluid and purulent discharge in cutting and touching experiments. The heart weighted 350 gr and a wide contusion in 5x5 cm was observed in the right lobe and the lower level of left lobe of liver. In addition, the gallbladder rupture caused the green purulent bile discharge released over the abdomen. The kidneys had hypotensive view. The acute heart failure based on ischemic heart disease was reported as the cause of the death, which physical injuries due to hitting by the hard object had accelerated the death (Figure 1).



Figure 1. Hematoma and laceration of liver in abdominal CT scan

3. DISCUSSION

The gallbladder traumatic injuries may cause contusion, avulsion and perforation. Of course, the anatomic location of gallbladder, its underlying conflicts such as gallstones and wall thickening may affect the type of injury (8). On the other hand, in post-traumatic diagnostic evaluations, the diagnosis of gallbladder trauma may be delayed, especially in the isolated cases (6). Most of the case studies emphasize this idea (3, 4, 6, 8, 9). The delayed diagnosis may last several days with irrecoverable effects on the injured (9). The elderly are at high risk of injuries due to their physical condition; therefore, in the case of old patients with blunt abdominal trauma, except liver and spleen, the gallbladder damage should also be considered (10). The patient may only show symptoms such as unknown pain and tenderness in RUQ which should be considered for peritonitis and perforation of peptic ulcer (4, 6). The primary sonographic evaluations include FAST sonography in the emergency ward or abdominal and pelvic sonography by the radiology specialist. These evaluations may only reveal fluid accumulation under the liver and gallbladder evaluation regarding acute traumatic injuries are neglected (1, 9, 10). To diagnose gallbladder

injuries, the probability of gallbladder injury in the accidents and blunt abdominal trauma should be considered and the accurate diagnosing methods should be employed accordingly. The best method to diagnose gallbladder injuries is abdomen CT scan (3, 4).

4. CONCLUSION

In all blunt abdominal trauma's, the probability of gallbladder injury should be considered. The best method for diagnose is abdominal CT scan.

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AUTHORS CONTRIBUTION

This work was carried out in collaboration among all authors.

CONFLICT OF INTEREST

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