

HOSTED BY



ELSEVIER

Contents lists available at ScienceDirect

Chinese Journal of Traumatology

journal homepage: <http://www.elsevier.com/locate/CJTEE>

Case Report

Imaging of unilateral adrenal hemorrhages in patients after blunt abdominal trauma: Report of two cases

Asli Tanrivermis Sayit ^{a,*}, Emrah Sayit ^b, Hediye Pinar Gunbey ^a, Kerim Aslan ^a^a Department of Radiology, Ondokuz Mayıs University Faculty of Medicine, Samsun, Turkey^b Department of Orthopaedics and Traumatology, Samsun Education and Research Hospital, Samsun, Turkey

ARTICLE INFO

Article history:

Received 19 July 2015

Received in revised form

9 May 2016

Accepted 25 May 2016

Available online xxx

Keywords:

Adrenal glands

Computed tomography

Magnetic resonance imaging

Blunt abdominal trauma

ABSTRACT

Adrenal hemorrhage following blunt abdominal trauma is extremely rare. Most of the lesions are unilateral and right sided. Although often asymptomatic, life-threatening adrenal insufficiency may develop in the bilateral adrenal gland hemorrhage. Isolated adrenal injuries are very rare. They are often associated with other organ injuries. The mortality rates of patients range from 7% to 32%. In this report, we present the computed tomography and magnetic resonance imaging findings of unilateral adrenal hemorrhages in two patients with a history of fall from a height.

© 2017 Daping Hospital and the Research Institute of Surgery of the Third Military Medical University.

Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Adrenal injuries after blunt abdominal trauma are very rare, but have been reported in 0.15% of patients in the literature. In 75%–90% of cases, hemorrhages are unilateral and the most affected gland is the right adrenal. Isolated adrenal injuries are very rare (4%) and are often associated with other organ injuries.¹ Associated trauma includes injuries of the liver (43%), spleen (23%), lung (19%), and kidney (18%), as well as pneumothoraces/hemothoraces. Also, skeletal injuries to the rib, clavicle, scapulae, pelvis, hip, and spine can be accompanied by adrenal gland trauma.¹ The mortality rates of patients range from 7% to 32%.² In particular, adrenal insufficiency due to bilateral adrenal gland hemorrhage, if untreated, can be fatal. Here, we present the cases of two patients with unilateral adrenal hemorrhage detected by using computed tomography (CT) and magnetic resonance imaging (MRI), together with the literature review.

Case report

Case 1

A 38-year-old male was admitted to the emergency department with a history of falling from a height of approximately 2–2.5 m. Upon admission, he was awake and complained of a severe pain in his right arm and pelvis. He was hemodynamically stable and laboratory findings were normal. The plain X-ray showed fractures in the right scaphoid bone and distal radius, as well as multiple fractures in the inferior pubic ramus. Also, contrast enhanced abdominopelvic CT was performed to evaluate the solid organ injuries. There was a slightly hyperdense (50 HU) 44 mm × 22 mm adrenal mass on the right with periadrenal fat stranding and minimal free fluid in Morison's pouch in the non-contrast abdominopelvic CT (Fig. 1A). There was also slight peripheral enhancement after contrast administration in the lesion (Fig. 1B). There were no intra-abdominal solid organ injuries due to trauma. Primarily, the lesion was thought to be an adrenal hematoma.

Four days later, a dynamic abdominal MRI (Signa HDX 1.5 T; GE Medical Systems, Milwaukee, WI, USA) exam was performed after stabilization of the patient to rule out a hemorrhagic adrenal mass. Multiplanar (axial, coronal, and sagittal) T₁ and T₂ weighted (W) images with and without fat saturation, T₁W images in-phase and out-phase spoiled gradient-recalled-echo, and dynamic T₁W images

* Corresponding author.

E-mail address: draslitanrivermissayit@gmail.com (A.T. Sayit).

Peer review under responsibility of Daping Hospital and the Research Institute of Surgery of the Third Military Medical University.

<http://dx.doi.org/10.1016/j.cjtee.2016.05.002>1008-1275/© 2017 Daping Hospital and the Research Institute of Surgery of the Third Military Medical University. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

were performed. The MRI revealed a 44 mm × 22 mm hypointense lesion in T₁ and T₂W images. Within the gland, a 10 mm × 11 mm focal area of hyperintensity was seen. Dynamic MR images revealed peripheral contrast enhancement in the lesion (Fig. 2). In-phase, out-of-phase, and fat-suppressed sequences did not show suppression in the lesion. Dynamic MRI findings ruled out a hemorrhagic adrenal mass to the adrenal hematoma. According to MRI findings, the lesion was compatible with an acute-phase adrenal hemorrhage.

Thirty days later, MR imaging showed the reduction of lesion size (14 mm × 37 mm) and signal intensity changes. A hyperintense lesion with a focal hypointense area is seen on T₁W (Fig. 3A) and 2D fast imaging employing steady-state acquisition sequences (Fig. 3B). Dynamic MRIs revealed peripheral contrast enhancement. The lesion was thought to be compatible with a subacute hematoma. Also, signal loss in the hematoma could be associated with hemosiderin deposits. Again, there was no suppression in the lesion of in-phase and out-of-phase sequences. It was decided that the patient should be followed without treatment. The patient was discharged 2 weeks later with protective stable immobilization of the pelvis.

Case 2

A 35-year-old male was admitted to the emergency department with a history of a fall from a height of about 1.50 m. On admission, he was conscious and hemodynamically stable. Vital signs and laboratory findings were normal. Physical examination revealed pain and tenderness in the right chest wall. Plain X-rays showed multiple fractures of the right 9th, 10th, 11th, and 12th ribs. Immediate thorax and abdominopelvic CTs without contrast administration were performed on the patient. The patient refused the intravenous contrast administration because of a history of allergy. Multiple fractures of the right 9th, 10th, 11th, and 12th ribs, diffuse subcutaneous emphysema in the right anterior chest wall, and bilateral hemothorax and fracture of the right transverse process of the right L₁₋₂ vertebrae were seen in the CT. A 24 mm × 25 mm left hyperdense adrenal mass (70 HU) and periadrenal fat stranding were seen in the CT (Fig. 4). Obvious solid organ injury and free fluid were not detected in the CT. The patient was treated conservatively because laboratory findings were normal.

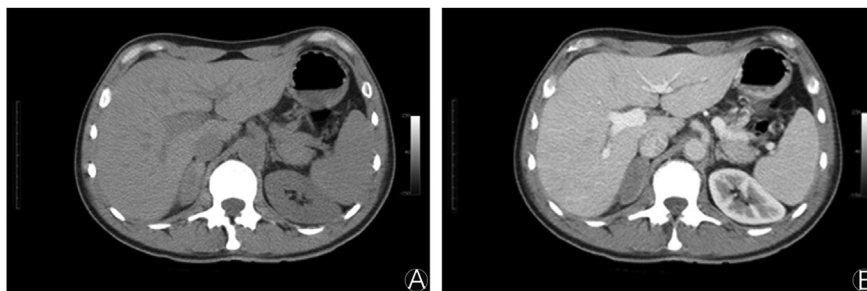


Fig. 1. Case 1. A 38-year-old male with a history of fall from a height. Initial abdominal computed tomography (CT) scan was performed after blunt abdominal trauma. **A:** Axial noncontrast CT image shows right slightly hyperdense (50 HU) soft tissue mass without periadrenal fat stranding. **B:** Axial contrast-enhanced CT image shows slightly hyperdense right adrenal mass with thin peripheral rim enhancement.

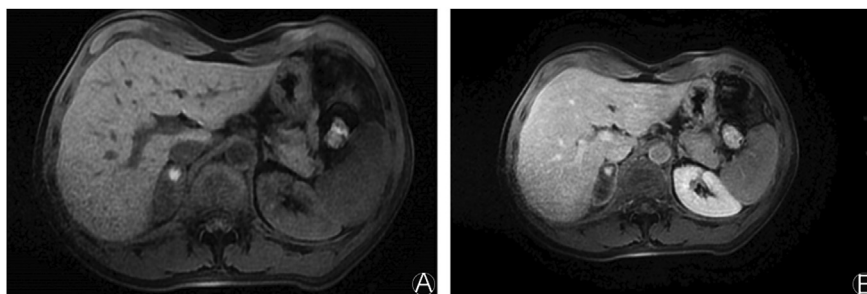


Fig. 2. Follow-up abdominal magnetic resonance imaging (MRI) performed 4 days later. **A:** Axial T₁-weighted image (TR/TE = 1.9/4.1) shows hypointense adrenal mass with small foci of high-signal intensity. **B:** Axial contrast-enhanced T₁ sequences (TR/TE = 1.9/4.1) shows peripherally enhancing hypointense adrenal mass with small foci of high-signal intensity.

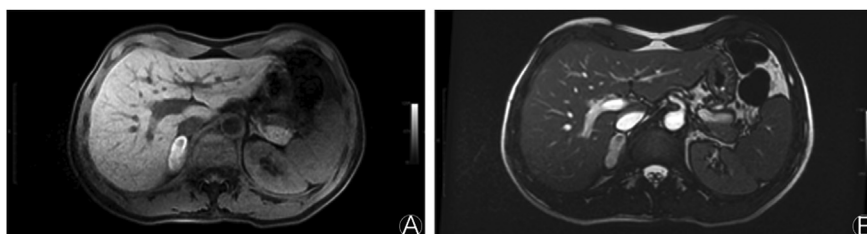


Fig. 3. Follow-up abdominal MRI performed 30 days later. **A, B:** Axial T₁-weighted (TR/TE = 1.9/4.1) and axial 2D fast imaging employing steady-state acquisition sequences (TR/TE = 1.6/3.7) show hyperintense right adrenal mass with small foci of low-signal intensity.

Download English Version:

<https://daneshyari.com/en/article/8695030>

Download Persian Version:

<https://daneshyari.com/article/8695030>

[Daneshyari.com](https://daneshyari.com)