

Isolated Adrenal Gland Injury After Blunt Trauma

Künt Travma Sonrası İzole Böbrek Üstü Bezi Yaralanması

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A 36-year-old male patient was admitted to the emergency department with abdominal and left side pain 1.5 hours after an in-vehicle traffic accident. The patient had no history of comorbidity or surgery. The patient did not receive any anticoagulant or antiplatelet therapy prior to the trauma. Vital signs of the patient were stable (Blood pressure 145/100 mmHg, pulse 98 beats/min, and temperature 37.2°C). Physical examination revealed no additional pathology except left side pain and left upper quadrant tenderness in deep palpation. White blood cells were found to be 17.330/mm³, hemoglobin level 17.34 mg/dL, and hematocrit 48.83% in the complete blood count examination. There was no abnormality in the biochemical analysis. An evaluation focused on sonography for trauma (FAST) in the emergency department was negative. Contrast-enhanced thoracoabdominal computed tomography (CT) scan was performed. Abdominal CT revealed a 44x42 mm

left central hyperdense and peripheral hypodense adrenal mass (63 Hounsfield unit) and perirenal fat strands. Additionally, a cortical cyst was observed in the upper pole of the left kidney (Figure 1). The lesion was evaluated as an adrenal hematoma. No other injuries were detected, especially no injury to the spleen or kidney. No rib or spine fractures were observed. The patient was treated conservatively with bed rest, parenteral fluid, antibiotherapy, and analgesics. Hemoglobin and biochemical parameters remained constant. Endocrinology consultation was requested for adrenal insufficiency. Endocrinological evaluations revealed no pathology. The control abdominal CT performed 7 days later showed that the hematoma did not progress (40x37 mm, central density is prominent) (Figure 2). The patient was discharged without any problems. An abdominal CT scan was planned to evaluate the resolution of the adrenal hematoma 1 month later. The patient was asymptomatic during the follow-



Figure 1. A- Left adrenal hematoma 44x42 mm attenuated central hyperdense and peripheral hypodense round mass in the adrenal gland, B- Perirenal fat stranding, C- Left kidney upper pole simple cortical cyst (Axial view of enhanced abdominal CT scan)

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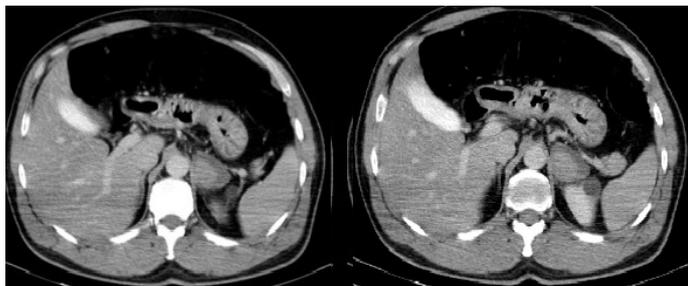


Figure 2. Control abdominal CT; regression of hematoma and increased appearance of central hyperdensity (Axial view of enhanced abdominal CT scan)

up. No abscess or infection format was observed. Informed written consent was obtained from the patient for this report.

Adrenal gland injury is a rare clinical picture caused by motor vehicle accidents, sports injuries, or blunt abdominal trauma after falling [1–3]. Isolated adrenal gland injury is rare due to its small size, deep retroperitoneal position on the upper abdomen, and presence of full-fat tissue around it. Most adrenal gland injuries are associated with multiple adjacent skeletal and organ injuries [4].

Adrenal gland injuries have been reported in approximately 2-3% of all thoracoabdominal injuries [5]. Unilateral adrenal injuries occur 5 times more on the right side than on the left (77% versus 15%), and bilateral adrenal injuries occur in 8% of cases in trauma [4].

Being usually silent and self-limiting, it does not require major operative intervention. However, it may be potentially life-threatening in some cases. The most common symptom is pain; other clinical presentations vary greatly, and it does not produce any specific symptoms or biomarkers. Abdominal pain, side pain, nausea, vomiting, hypotension, hypertension, a palpable side mass, agitation, mental status changes, and low-grade fever may occur [6]. The emergency physician should be aware of the possibility of organ damage associated with adrenal injury and the potential for adrenal insufficiency especially if an unusual complaint is presented after blunt trauma (unexplained hypotension, electrolyte disorder, and pain that does not go away despite analgesics) [3].

Although ultrasonography is noninvasive, easily accessible, and inexpensive, it is dependent on the person and can sometimes be inadequate when evaluating retroperitoneal organs. CT is the gold standard for detecting adrenal gland injury as in all trauma cases [7]. CT scan findings of adrenal gland injury include hyperdensity, periadrenal fat stranding infiltration, and ipsilateral diaphragmatic crural thickening [4,8]. Furthermore, the need to monitor and rule out an underlying adrenal neoplasm should be taken into account in these patients due to possible bleeding to a pre-existing adrenal mass [9].

Surgery (adrenalectomy) and interventional radiologic procedures (embolization) may be needed although most adrenal gland injuries are treated conservatively. Treatment depends on the hemodynamic condition of the patient, the severity of the gland damage, bilateral gland involvement, and the extent of bleeding within the gland [10].

Keywords: adrenal, blunt trauma, bleeding, hematoma

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