

Typical CT Imaging Findings of Subacute Primary Adrenal Insufficiency

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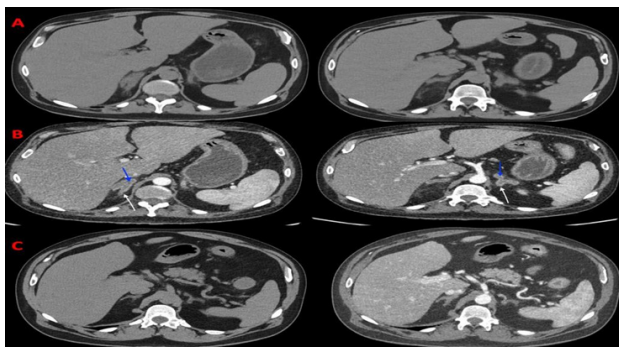
Primary Adrenal Insufficiency (PAI) is a rare disorder that represents the final stage of the adrenocortical destruction process, it's characterized by reduced aldosterone and cortisol production due to decreased glandular function. It can present acutely, in the form of adrenal crisis, or chronically, in the form of Addison's disease [1].

The most common cause of primary adrenocortical insufficiency is related to autoimmune destruction of the adrenal cortex. Other adrenal injuries that lead to primary insufficiency include adrenal hemorrhage (disseminated intravascular coagulopathy, antiphospholipid syndrome, or other thrombophilic conditions, bleeding disorders, and use of anticoagulant), cancer, infections (tuberculosis, HIV, syphilis), and certain drugs [2-4].

The diagnosis of primary adrenal insufficiency requires suspicion because it is often associated with nonspecific symptoms. Hyponatremia with hyperkalemia and hypoglycemia may be present. Serum cortisol, ACTH, renin, aldosterone, and chemical levels should be obtained [5].

The scanner reveals signs depending on the cause and the course of the disease: acute, subacute or chronic [6,7]:

- Acute: Bilateral adrenal hematoma
- Subacute (adrenalitis): bilateral adrenal gland enlargement, central necrosis, and peripheral edge enhancement.



- Chronic: Both adrenal glands appear small and atrophic, associated with calcification in granulomatous adrenalitis.

CT abdominal image of bilateral hemorrhage and adrenal infarction in a patient with systemic lupus erythematosus antiphospholipid syndrome.

Axial CT sections (A) without injection, (B) with injection showing bilaterally enlarged adrenal glands with hypodense central areas suggestive of necrosis (blue arrows), and peripheral contrast enhancement (white arrows), (C) the control CT, 9 days after treatment shows a normal size and enhancement of the bilateral adrenal glands, indicating resolution of the bleeding.

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