

Common Iliac Artery Imprint: An Underrecognized Cause of Reversible Ureteral Obstruction

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Clinical Image

A 60-year-old male with no significant past medical history presented to the emergency department with acute right nephritic colic. All laboratory values, including renal function markers, were within normal limits.

An urgent contrast-enhanced abdominopelvic computed tomography (CT) scan was performed during the arterial and delayed (excretory) phases. The imaging revealed moderate right-sided ureteropelviccal dilatation. Axial and coronal arterial-phase CT reconstructions demonstrated a sharp, focal extrinsic indentation of the right lumbar ureter as it crossed anteriorly over the right common iliac artery at the L5 vertebral level. Crucially, there was no evidence of intrinsic wall thickening, urolithiasis, or retroperitoneal masses. Delayed-phase images confirmed a clear transition zone from the dilated proximal segment to the focal compression site, with normal distal ureteral caliber.

Extrinsic compression of a normal-caliber ureter by a healthy common iliac artery is an exceptionally rare cause of mechanical obstruction. While the ureter anatomically crosses the iliac vessels at the pelvic brim, symptomatic compression typically requires specific anatomical variants or high arterial pulsatility [1,2]. In this patient, the obstruction was transient; symptoms resolved spontaneously without intervention. A follow-up ultrasound at four weeks confirmed complete resolution of the upstream hydronephrosis. Recognizing this pathognomonic CT pattern—segmental upstream dilatation with a focal vascular-crossing indentation and no intrinsic pathology [3]—is essential to prevent unnecessary invasive interventions, such as stenting or surgical ureterolysis.



Figure 1: Contrast-enhanced CT reconstructions during the arterial phase. (A) Axial image showing the right common iliac artery (White arrow) exerting a focal extrinsic impression on the adjacent right lumbar ureter (Red arrowhead) anterior to the L5 vertebral body. (B) Coronal reformation confirming focal narrowing of the right ureter (red arrowhead) as it crosses over the common iliac artery (White arrow).

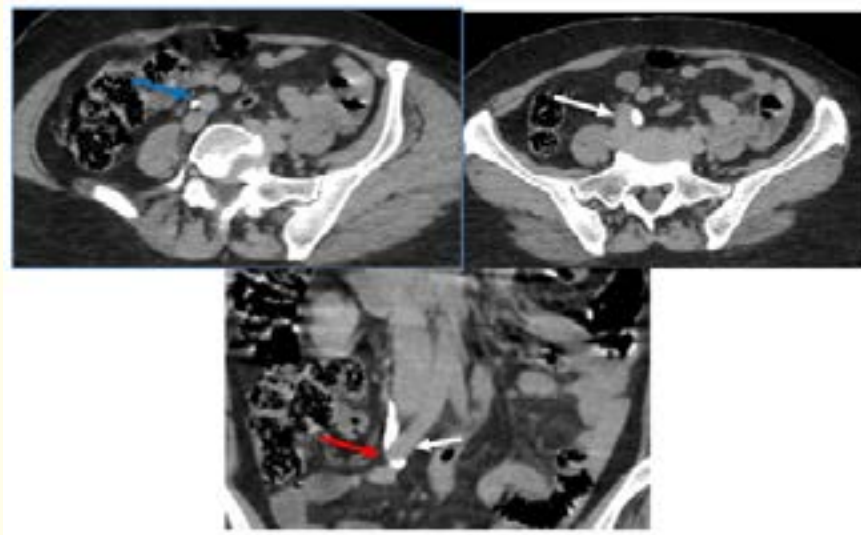


Figure 2: Delayed-phase CT reconstructions. (A) Axial slice proximal to the compression displaying the dilated lumbar ureter (Blue arrow). (B) Axial slice at the compression site showing the arterial focal indentation on the ureteral lumen (Black arrowhead). (C) Coronal reformation confirming the transition from upstream dilatation to focal narrowing (Red arrowhead) over the artery (White arrow).

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