

# Unilateral Ectopic Right Kidney, an Incidental Finding during Pelvic Sonogram

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An ectopic renal kidney was found incidentally during pelvic sonogram of a woman with incomplete abortion. The importance of pelvic ectopic kidney in obstetrics and gynecology and the significance of looking for a contralateral kidney before any pelvic surgery is embarked upon are discussed. A short review of significant differential diagnosis was also made.

**Key words:** pelvic kidney ■ solitary kidney ■ incidental finding ■ pelvic sonogram

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## CASE REPORT

A 32-year-old woman with acute abdominal symptoms and signs was seen in the emergency room. In addition, there was history of vaginal spotting, and a poorly defined right pelvic mass was palpable that could not be fully examined because of abdominal tenderness. Acute abdominal problems, such as appendiceal inflammation/abscess or mass and others emanating from anatomically contiguous structures, were initially thought to be the cause of these patients' problems.

Gynecology consult was requested, and initial suspicion of ectopic pregnancy was made, but on further assessment, an incidental finding of a right ectopic kidney was confirmed on pelvic sonogram. Complete evaluation revealed an incomplete abortion for which a dilatation and curettage was done.

An identical overlap exists among gynecological, lower gastrointestinal and genitourinary problems. Nausea and anorexia, fever, leukocytosis and especially pain are common symptomatology to these organ systems.

From parietal pain such as pseudorenal pain (radiculitis) to visceral autonomic nervous connections such as peritoneal irritation, organ relationships with anatomically contiguous structures and reno-intestinal reflexes, referred pain and imitation of pain from various organ diseases could confuse accurate diagnosis.<sup>1</sup>

Lower abdominal pain and tenderness emanating from peritoneal irritation are common to most pelvic organ lesions and represent diagnostic dilemmas in the diagnosis of pelvic inflammatory disease, inflammatory bowel diseases and appendiceal inflammatory processes (including a phlegmon or mass). In addition, ectopic pregnancies or various subtypes of spontaneous abortion, tubo-ovarian abscess, endometriosis, adnexal torsion may present with indistinguishable features. Urinary tract infection or obstructive acute uropathy also have similar clinical presentation.

Incidental lesions/pathologies may further compound the clinical pictures and complicate the ease at reaching an accurate diagnosis.

Pelvic renal ectopia (simple or crossed) occurs when the metanephros retains its pelvic position rather than ascend. It has an estimated incidence of 1:900.<sup>2</sup> Though often clinically asymptomatic, it is an important differential diagnosis in the etiology of pelvic masses or tumors,<sup>3</sup> and pelvic pain, including acute appendicitis. An attempt should be made to look for other congenital anomalies, especially in the urogenital structures. Furthermore, the possibility of the renal ectopia being the only solitary kidney must be an important consideration taken into account at all times.

Anderson and Harrison,<sup>1</sup> and Delson<sup>3</sup> in separate reviews of renal ectopia in pregnancy did not find reports supporting the evidence of maternal or fetal complications or dystocia. The incidence of hypertension was also not significantly raised. However, the obstetrician should be aware that the pressure effects on the collecting system in pregnancy might lead to inefficient drainage that may potentiate infection and stone formation.

Bencheckroun and others<sup>2</sup> reported the rarity of pelvic kidneys. His review illustrated presentation with pain

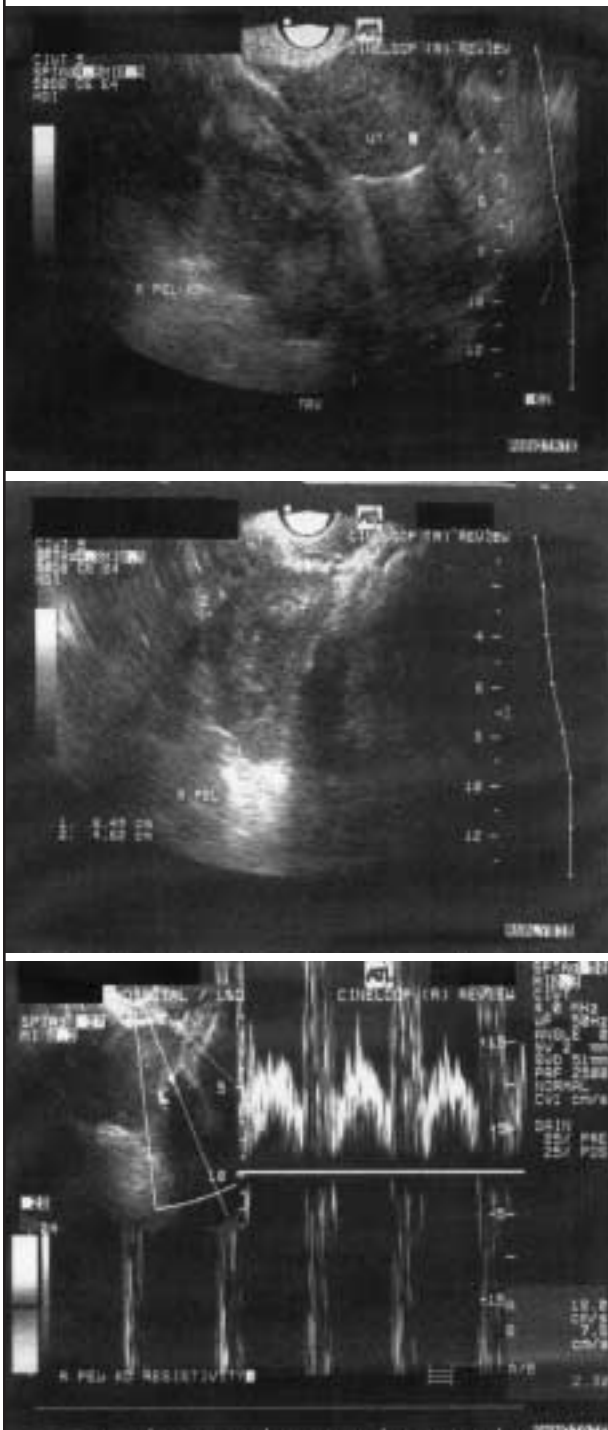
and urological symptoms, and complication by renal stone and hydronephrosis.

In acute and elective obstetrical and gynecological

operations, the pelvic kidney is susceptible to iatrogenic trauma. Renal contusion or laceration, ureteric de-vascularization, laceration or ligation, and arterial occlusion or renal vein thrombosis could lead to temporary or

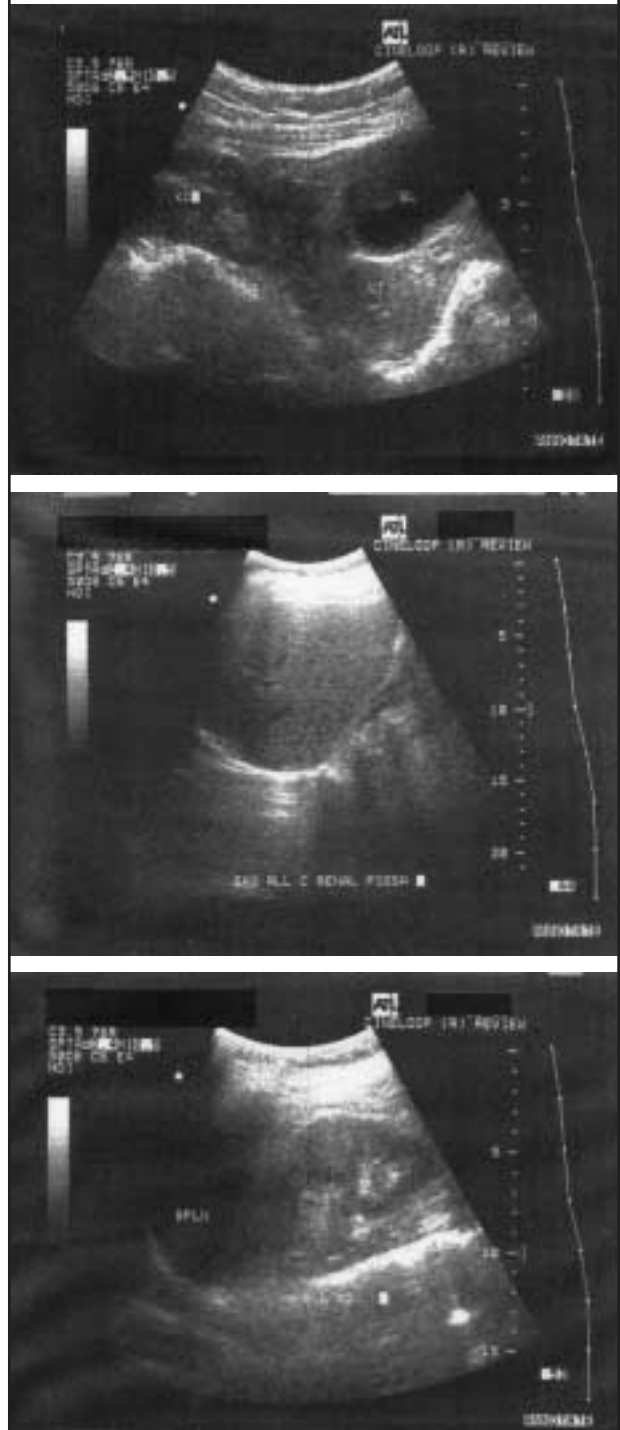
**Figure 1. Transvaginal sonogram showing: a) uterus and right pelvic kidney; b) the reniform shape of the kidney with longitudinal dimensions of 8.49 x 4.62 cm, and c) the Doppler cursor in the hilum of the kidney showing the Doppler tracings and resistance index (RI) of the renal artery**

Kd: kidney; Bl: bladder; Spln: spleen; Ut: uterus; L: left; R: right



**Figure 2. Transabdominal sonogram showing: a) right pelvic kidney, uterus and bladder; b) hepatorenal pouch with empty right renal fossa; and c) the left kidney in situ, anatomically contiguous with the spleen**

Kd: kidney; Bl: bladder; Spln: spleen; Ut: uterus; L: left; R: right



irretrievable damage of the urinary drainage system. Ectopic positions also pose further hazards to interventional radiological and laparoscopic procedures and emergency operations such as Cesarean section.

Furthermore, there is also an increased risk of formation of adhesions or infections in renal ectopia after open surgical or laparoscopic and radiological procedures, which may become manifest in the form of obstruction or infection and stone formation.

Once renal ectopia is suspected or diagnosed, every attempt should be made to locate the contralateral kidney, as damage or removal of a solitary ectopic kidney may lead to renal insufficiency, which may necessitate dialysis or transplantation.

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