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PAGE KIDNEY AS A RARE CAUSE OF HYPERTENSION: CASE REPORT AND REVIEW OF THE LITERATURE

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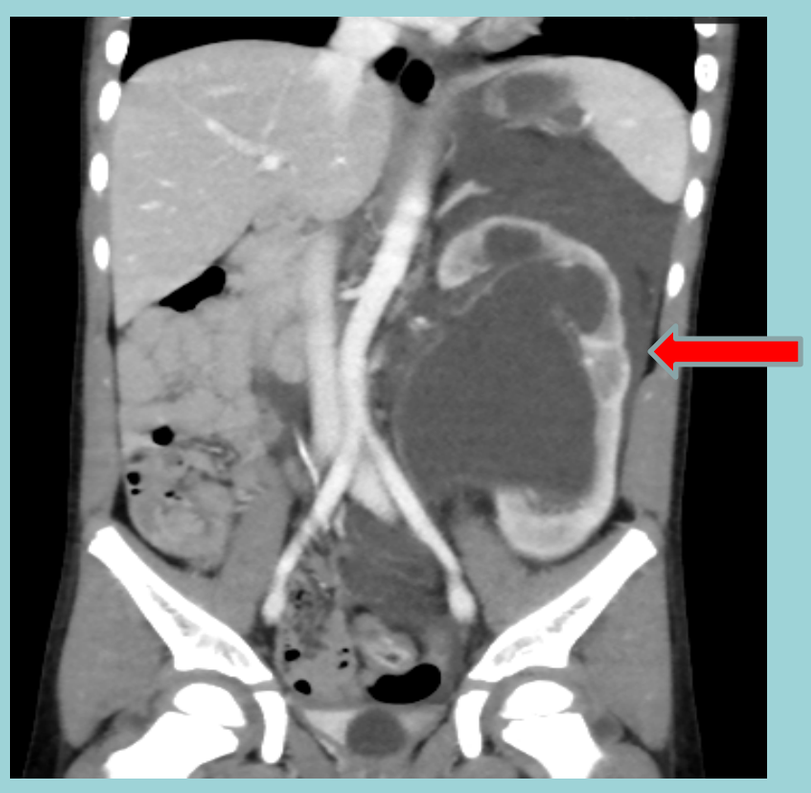
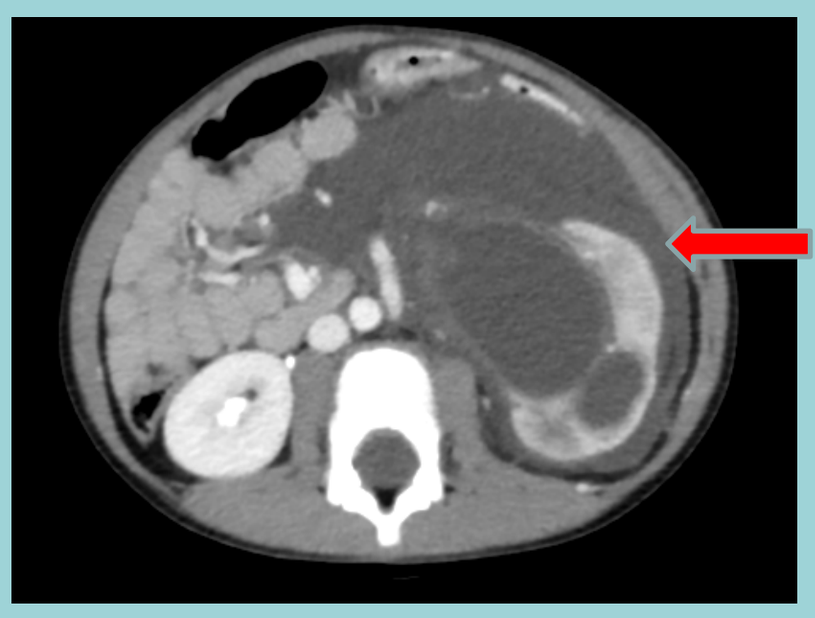
INTRODUCTION

Page kidney first described by Pages[1] in 1939 using a canine model, involves hypertension from wrapping kidneys in cellophane. First case reported in 1955, football player with blunt renal trauma, leading to subcapsular hematoma and hypertension, which resolved with nephrectomy[2]. This syndrome triggers arterial hypertension through activation of the renin-angiotensin-aldosterone system. Management includes antihypertensive treatment or surgical intervention like hematoma drainage or nephrectomy. This paper presents a case of Page kidney syndrome in a child who sustained blunt force trauma.

CASE REPORT

A 4-year-old boy with underlying hydronephrotic left kidney due to congenital pelvic-ureteric junction obstruction presented with left flank pain and severe hypertension (197/132 mmHg) following a fall. Physical examination showed left flank tenderness, hematuria, and a ballotable left kidney. CT imaging revealed a subcapsular hematoma and suspected ruptured renal pelvis. Despite analgesia, his hypertension persisted, requiring parenteral Labetalol. Urological intervention with cystoscopy, Retrograde Pyelo-Gram, and DJ stenting was performed, leading to normalization of blood pressure and weaning off Labetalol. Post-stenting, he was discharged without antihypertensives. Two months later, he underwent elective pyeloplasty with improved outcomes and normal blood pressure.





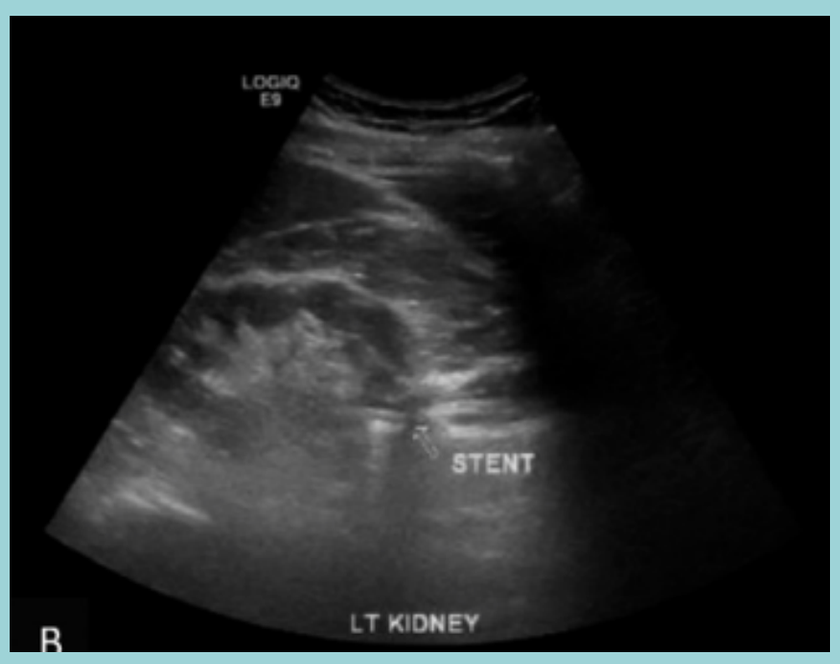


Figure 1: Contrasted-enhanced computed tomography images shows enlarged left kidney with gross hydronephrosis and presence of huge subcapsular hematoma.

Figure 2: Ultrasound KUB of left kidney showing resolved hydronephrosis with DJ stent in-situ.

DISCUSSION

Page kidney has been recognized as a clinical entity for several decades. In 1991, McCune et al published a review of 80 cases of Page kidney reported between 1955 and 1991.[3] It commonly affects young male athletes after sports-related trauma but can also result from medical or surgical interventions. The occurrence of Page kidney is directly related to its retroperitoneal anatomical location of the kidney limits its ability to absorb shock, causing ischemia and hypertension when enveloping layers fill with blood or fluids.

Imaging modalities such as CT and MRI are preferred for diagnosing due to their detailed visualization of retroperitoneal anatomy.

Management focuses on controlling hypertension, typically with ACE inhibitors, but severe cases may require surgical intervention like nephrectomy or drainage of the hematoma. However, the treatment paradigm has evolved from invasive procedures to less invasive ones like percutaneous drainage and endoscopic interventions. When a fibrous capsule is present, the treatment options are limited to stripping of the fibrotic area and or total / subtotal nephrectomy[2]. In our patient, an expedient and timely endoscopic- DJ stent placement restored continuity to urinary flow and immediate reduction of hydronephrosis led to normalization of blood pressure.

In conclusion, each case of Page kidney must be individually addressed as there is no unified approach to its management. Two main goals of treatment are correction of hypertension and preservation of renal function. As clinicians, we should be aware of this entity as part of the blunt trauma spectrum and of the various options available for management. Early intervention is key in the prevention of chronic hypertension and preservation of kidney function.

1. Page I. The production of persistent arterial hypertension by cellophane perinephritis. JAMA. 1939;113:2046–2048.
2. Engel WJ, Page IH. Hypertension due to renal compression resulting from subcapsular hematoma. J Urol. 1955;73:735–739.
3. McCune TR, Stone WJ, Breyer JA: Page kidney: Case report and review of the literature. Am J Kidney Dis 18:593-599, 1991