

## BRIEF REPORT

# Traumatic intracystic hemorrhage in polycystic kidney

Imtiaz WANI<sup>1</sup> and Omar KIRMANI<sup>2</sup>

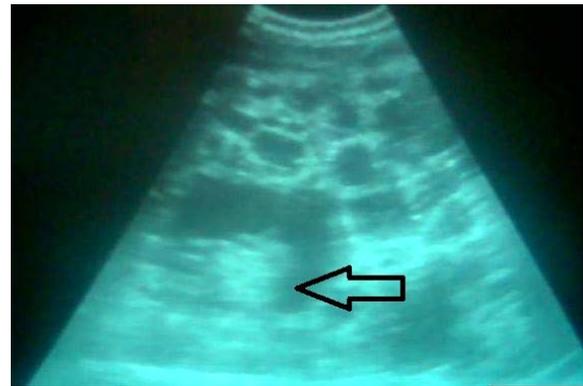
<sup>1</sup>Department of Surgery, SKIMS, Srinagar, Kashmir, India

<sup>2</sup>Department of Radiology, SMHS Hospital, Srinagar, Kashmir, India

**Key words:** trauma, hemorrhage, polycystic, kidney, adult

Blunt abdominal trauma is a routine challenge in clinical practice. Both pathological as well as normal abdominal viscera are vulnerable for injury after blunt trauma. Adult polycystic kidney (APK) is regarded as a systemic disorder characterized by occurrence of cysts in kidney and other organs in body.<sup>1</sup> Because of its peculiar characteristic, APK is more vulnerable to trivial blunt trauma. A case report of adult polycystic kidney disease (APKD) with intracystic hemorrhage occurring after hit by thick rope on left flank is presented. Patient presented with flank pain and hematuria. Ultrasonography and computed tomography abdomen confirmed diagnosis of isolated APK injury with intracystic hemorrhage. Patient was managed conservatively. Occurrence of isolated injury to polycystic kidney after trivial trauma on abdomen is rare. After trivial trauma occurrence of intracystic hemorrhage is more than occurring of extracystic in APK. Intracystic hemorrhage results in abdominal pain and hematuria. Most of times intracystic hemorrhage in APK is managed conservatively.

A 56 year old male, known case of Adult polycystic kidney disease (APKD) and on treatment, presented with pain left flank and hematuria after a having strike on his left abdomen by a thick rope. General physical examination was within normal limits. No hypertension was recorded. Per abdominal examination revealing tenderness on left upper abdomen and left renal angle. Abdominal sonography showing bilateral polycystic kidney disease, multiple cysts in liver and no cyst in other organs. In left polycystic kidney, a hyperechoic shadows in two cysts were seen suggestive of intracystic hemorrhage. (Fig. 1).



**Figure 1** showing hemorrhage (Hyperechoic) in a cyst in APKD occurred after blunt abdominal trauma.

No free fluid was found in peritoneal cavity. Non contrast computed tomography (CT scan) abdomen showing intracystic hemorrhage. Patient was managed conservatively and hematuria gradually cleared off in 48 hours. Rescan abdominal sonography was used to monitor intracystic hemorrhage and renal parameters. CT scan head was done in follow up to look for any occult aneurysm. Patient is regularly attending follow up for last 3 years.

Polycystic kidney disease or polycystic kidney syndrome is a progressive genetic disorder. APKD occurs with frequency of 1:500-1:1000 and this systemic disorder affects people of all ages, races, ethnicity and social status, men and women alike.<sup>2</sup> The mode of transmission being as autosomal dominant. Mutations in PKD1 (85%), PKD2(15%) and PKD3 (small percentage) gene are seen in this entity.<sup>3</sup> This systemic disease has 10% of patients having associated cysts in other organs such as liver, most common, 75% by age 60 years, ovaries, spleen 5%, seminal vesicles 60% by age 40 years, prostate 11% and 10% have in pancreas.<sup>4</sup> Non-cystic abnormalities such as intracranial abnormalities and intracranial berry aneurysm, hypertension, colonic

diverticulosis, small bowel diverticula, bicuspid aortic valve, mitral valve prolapse or aortic dissection may be present.<sup>5</sup>

Adult polycystic kidney disease is characterized by late onset with progressive cyst development and being multiple cysts. A single cyst can grow as large as a grape fruit. The manifestation starts in fourth decade of life. The kidney is grossly bilaterally enlarged, the feature which renders it easily vulnerable to blunt abdominal traumatic insult. Gross hematuria is a common manifestation of PKD after blunt trauma.<sup>6</sup> A traumatic insult leads to intrarenal hemorrhage within cyst. Sometimes a trivial traumatic insult could lead to diagnosis of this rare entity for first time.<sup>7</sup> Rarely hemorrhage occurs extrarenally. Traumatic rupture can mimic an acute abdomen. A case of ureteropelvic junction obstruction in association with autosomal dominant polycystic kidney disease subsequent to fall with retroperitoneal bleed has been reported.<sup>8</sup>

Most of the cysts have sharply outline contours, sharp interfaces with adjacent renal parenchyma imperceptible walls of homogenous density and did not enhance following intravenous contrast administration on computed tomography. Cyst hemorrhage is seen as high density lesion. Bleeding into cysts are best diagnosed by Magnetic resonance imaging (MRI) demonstrating cyst containing hemorrhagic fluid with mixed signal intensity and a fluid level on both T1 weighted and T2 weighted sequences. Management is conservative. In complicated cases, surgical intervention is deemed desirable.

## REFERENCES

1. Torres VE, Harris PC, Pirson Y. Autosomal dominant polycystic kidney disease, *Lancet* 2007;369:1287.
2. Wilson PD. Polycystic kidney disease. *N Engl J Med* 2004;350:151.
3. Harris PC, Bae KT, Rossetti S, et al. Cyst number but not the rate of cystic growth is associated with the mutated gene in autosomal dominant polycystic kidney disease. *J Am Soc Nephrol* 2006;17(11):3013-19.
4. Irazabal MV, Huston J 3rd, Kubly V et al. Extended follow-up of unruptured intracranial aneurysms detected by presymptomatic screening in patients with autosomal dominant polycystic kidney disease. *Clin J Am Soc Nephrol*. 2011 6(6):1274-85.
5. Grantham JJ. Autosomal dominant polycystic kidney disease. *N Engl J Med*. 2008;359(14):1477-85.
6. Alameel T, West M. Tranexamic Acid treatment of life-threatening hematuria in polycystic kidney disease. *Int J Nephrol*. 2011;2011:203579.
7. Klein AJ, Kozar RA, Kaplan LJ. Traumatic hematuria in patients with polycystic kidney disease. *Am Surg*. 1999;65(5):464-6.
8. Zaslau S, Talug C, Boo S, Roberts L. Ureteropelvic junction obstruction in association with autosomal dominant polycystic kidney disease: a case report in a trauma patient. *W V Med J*. 2008 ;104(1):15-7.