

Bilateral Clinically Visible Giant Hydronephrosis Mimicking Severe Ascites

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Abstract

Background and Objectives: Giant hydronephrosis refers to a hugely dilated kidney containing more than 1 L of fluid. It is usually due to congenital pelvi-ureteral junction obstruction in children. In adults, however, urolithiasis is the main cause and may result in bilateral conditions mimicking ascites. We aimed to present a case of bilateral giant hydronephrosis causing huge abdominal distention.

Case Report: A 73-year-old male patient presented with diffuse abdominal pain and distention. His abdomen was massively distended with pendulous and irregular contour. Bilateral renal masses were expected due to the smooth surface and cystic consistency. Urine analysis showed 40-70 pus cells/HPF and serum creatinine level was 3.4 mg/dl. Abdominal ultrasonography revealed hugely dilated kidneys with lost renal parenchyma due to bilateral ureteral stones. Bilateral nephrostomy tubes were inserted under local anesthesia with gradual drainage and produced 4.8 L and 5.2 L from the right and left kidneys, respectively. After improvement of serum creatinine and hemoglobin values, ureteral stones were treated endoscopically. Follow up ultrasonography showed decompressed kidneys and serum creatinine around 2 mg/dl.

Conclusion: Bilateral giant hydronephrosis is a cause of massive abdominal distention. It could be promptly diagnosed by ultrasonography. Initial percutaneous nephrostomy is recommended to save any potential residual functions.

Introduction

Giant hydronephrosis is a rare condition and could be confused with the other common causes of abdominal distention such as ascites and tumors [1-3]. It is commonly reported in

pediatrics due to congenital pelvi-ureteral junction obstruction which is commonly unilateral rather than bilateral [1,4]. The initial impression is usually depicted from imaging which commonly reports lost renal parenchymal thickness, where it is considered as non-functioning in most of the instances [2,5]. Therefore, the common reported treatment is nephrectomy [2,6]. However, a recent trend in the literature has been adopted as an initial placement of a percutaneous nephrostomy rather than to attend directly nephrectomy [1]. Specifically, the state of bilateral giant hydronephrosis may represent a unique situation that mandates a vivid differential diagnosis at presentation and wise decision to opt the initial placement of nephrostomy tube and not to rush directly to dialysis. Bilateral giant hydronephrosis seems to be an obligatory indication for percutaneous nephrostomy, where the patient presents with elevation in renal functions [1].

Case Report

A 73-year-old male patient presented with massive abdominal distention and abdominal pain. Physical examination revealed poor general look, but with normal values of vital signs and average body built and very huge abdominal distention with pendulous appearance and irregular surface (Figure 1). The abdomen was dull on percussion with cystic consistency, but neither shifting dullness could be elicited nor definite mass was localized. Xiphisternum was curved upward due to long standing abdominal distention. Examination of the external genitalia revealed bilateral epididymal indurations and mild hydroceles. Digital rectal examination revealed moderately enlarged prostate with the criteria of benign prostatic hyperplasia.

Initial evaluation included serum creatinine (3.4 mg/dl), increased pus cells in urine analysis (40-70 pus cells/HPF), and hemoglobin level of 8.9 g/dl. Other findings of hemogram and bleeding and coagulation profiles were unremarkable. Abdominal radiograph showed bilateral lower ureteral stones, while abdominal ultrasonography showed bilaterally huge hydronephrotic kidneys filling the whole abdomen with clear fluid and lost parenchymal thickness.

The patient and his relatives were counselled about the condition of the both kidneys and the available lines of treatment. Accordingly, bilateral percutaneous nephrostomy tubes were placed under ultrasonographic guidance and local anesthesia. Considerable amounts of fluid were gradually drained as 4.8 L and 5.2 L from the right and the left kidneys, respectively. The patient was followed up for 1 month within which anemia was corrected. Then, he was prepared for bilateral endoscopic stone disintegrations consecutively due to relatively large stone burdens with ureteral stents which were left for 3-6 weeks before being removed. Follow up was continued for about 20 months within which abdominal ultrasonography revealed decompressed kidneys with irregular outlines and measurable cortical thickness varied as 5-8 mm. Also, urinary tract infections reoccurred many times and were treated by different courses of antimicrobial therapy according to culture and sensitivity tests. Serum creatinine level varied during follow up between 1.9-2.8 mg/dl with a mean of 2 mg/dl.



Figure 1: Clinical appearance of bilateral giant hydronephrosis: lateral view.

Discussion

Giant hydronephrosis is a rare entity and is commonly seen in the pediatric ages due to congenital obstructions such as congenital pelvi-ureteral junction obstruction [4]. In adult ages, however, presentation of the giant hydronephrosis due to congenital causes is less common and other causes may evolve such as ureteral stones [6,7]. It is commonly reported from the developing countries and patients with poor general conditions [1,4,8]. The current case was unique in many aspects including the elderly patient with poor general conditions, bilateral visible giant hydronephrosis, relatively non-severe rising of serum creatinine, renal preservation by bilateral nephrostomy tubes, and relatively long-term follow up with a considerable control of progression of end stage renal disease.

Urolithiasis is a common disease with a geographic distribution including many countries of the Middle East and south of Asia and is known as The Afro-Asian stone-forming belt [9]. Our country is in this belt and has high rates of urolithiasis and hydronephrosis which may be unilateral or bilateral [9]. Severe degree of hydronephrosis due ureteral stones may be less common than the congenital causes, however, it is more common in adults [6,7]. When the kidney becomes hugely dilated and contains more than 1 L/1.6% of body weight of fluid in its collecting system or increased its size as more than five vertebral heights in radiographs is defined as giant hydronephrosis [1]. Moreover, the dilated kidney could enlarge up to be clinically visible and presents commonly with abdominal pain or as abdominal distention to be confused as ascites or tumors [1,2,5].

Clinical presentation with abdominal distention has many differential diagnoses, where hugely dilated kidneys could be mistaken as ascites. Although the clinical features of the abdominal distention in hydronephrosis seem to be different than them in ascites, differentiation is difficult in the massive cases [1,2].

Abdominal ultrasonography is very useful as an initial imaging, where it can differentiate the kidneys from the free intraperitoneal fluid of ascites. It could be enough for prompt diagnosis and initial management [5]. Further imaging may include non-contrast computed tomography for studying of the anatomical aspects as sites of stones [1,6]. Functional evaluation is

accurately achieved via renal isotope scanning to decide whether to proceed to nephrectomy or correction of the cause [1,5]. However, our policy in giant hydronephrosis is to try to avoid nephrectomy and place percutaneous nephrostomy tube, unless the patient opts to surgery or in the case that he has bilateral giant hydronephrosis, where he presents commonly with raised renal functions. This management is provided, even if the patient may be scheduled on regular dialysis after the initial treatment. Accordingly, we did not do renal isotope scanning. Moreover, acute presentation may be another absolute indication for percutaneous drainage [1,5].

Controversy is raised about direct nephrectomy in the cases of unilateral giant hydronephrosis. Initial placement of percutaneous nephrostomy tube has been recommended as the first line of treatment to save the potential residual functions [1]. Our experience from the current case and many previous ones revealed that the non-infected giant hydronephrosis may still have considerable residual functions.

Follow up of these cases is useful to stand on the progress of the renal functions towards improvement or deterioration [1]. Recurrent urinary tract infections are a major problem in these cases after decompression. We believe that the hugely dilated kidney becomes redundant with irregular pelvicalyceal residual dilatation after loss of the compression forces of the normal compact parenchyma and capsule of the normal kidney. Like the current case, infections may progress into gross pyuria, persist for long times, and result in raised renal functions. However, preservation of renal functions and delay of the potential progress of end stage renal disease may outweigh all these problems.

In conclusion, clinically visible giant hydronephrosis may be bilateral and present as massive abdominal distention mimicking ascites or abdominal tumors. It should be kept in mind on physical examination of patients presented with abdominal distention. Initial placement of percutaneous nephrostomy tube in these cases is mandatory, where significant residual renal functions could be saved and help avoid rapid progression into the end stage renal disease.

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