

## Giant Hydronephrosis and Hydroureter. Early diagnosis with computed tomography (CT) scan-Case Report and Review of Literature.

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### ABSTRACT

Giant hydronephrosis is an infrequent entity in adults, most cases discovered in young to middle aged group. Our object is a case report of giant hydronephrosis and review of literature. Symptoms of abdominal distension, should be considered in the differential diagnosis of large intra-abdominal cystic masses. The importance of diagnostic imaging modalities in diagnosis. Role of computed tomography in early diagnosis and differential diagnosis of giant hydronephrosis, and CT is the best imaging modality to facilitate urgent treatment.

**Keywords:** *Giant hydronephrosis and hydroureter, computed tomography.*

### INTRODUCTION

The first case of [1] giant hydronephrosis (GH) was published in 1746. Stirling in 1939 defined giant hydronephrosis [1-7] as the amount of fluid exceeding 1000 ml or 1.6 % of body weight of fluid in the collecting system. Crooks et al. [2,4,8] proposed that giant hydronephrosis should be defined as a kidney occupying half the abdomen, which meets or crosses the midline and is at least 5 vertebrae in length..

Giant hydronephrosis is infrequent entity. It is seen more often in males than in females. Most reported cases of GH [9] occur in infants and children and is uncommon in adults due to urinary tract obstruction as well as a large abdominal mass was identified [10] in a 37 gestational week female fetus. Urinary tract obstruction [8,11] may occur at any site of urinary tract unilateral or bilateral. The major causes of obstruction depending on age of the patient. Congenital anomalies [1,3,7,8,12] including urethral stricture, ureterovesical or ureteropelvic junction stenosis are most common causes in children. Calculi are the most common causes in young adults while prostatic hyperatrophy or carcinoma, retroperitoneal or pelvic neoplasms and calculi more frequent causes in older patients. In adults the diagnosis can prove to be difficult and often misdiagnosed clinically. More than [8,9] 600 cases of GH have been reported.

Establishing the correct diagnosis of GH is [8,13] necessary to plan management.

The aim of this paper is to present one case of giant hydronephrosis with 2000 ml retained urine in its urinary tract, respectively was primarily diagnosis as a malignant abdominal mass along with a review of the current literature.

### CASE PRESENTATION

The article presented a case report study of 24 years old libyan man and early diagnosis of giant hydronephrosis and hydroureter with computed tomography (CT) scan.

The patient presented to our department as emergency case with vomiting, diffuse abdominal distension and severe continuous bilateral loin pain. The patient was restless and unable to remain still.

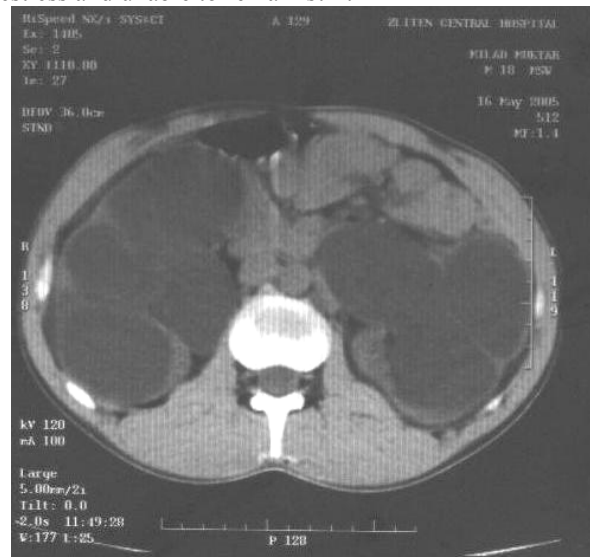


Figure 1: CT scan of abdomen showed a very huge hydronephrosis and both kidneys push abdominal content anteriorly. Remained thin parts of parenchymal renal tissue.



Figure 2 : CT scan showed a huge dilated both ureters with urinary bladder in between.



Figure 3 : CT scan showed grossly dilated urinary bladder.

Patient had history of operation for urethral stricture one year back.

The physical examination revealed; suprabubic scar, normal complete blood count, creatinine and blood urea are within normal range.

Ultrasonography revealed multiple big like-cystic lesion occupied the entire abdomen, in the same time the urinary bladder was full.

The patient was referred to CT scan unit as an emergency case. CT scan showed a grossly dilated bilateral

pelvicalyceal system, dilated ureters and dilated urinary bladder, all these changes appeared like balloons shaped nearly occupied the entire abdomen with compression of adjacent viscera. Both kidneys could not be visualized and lost their architecture. Remained compressed thin renal parenchyma (Fig. 1). Tortuous and dilated ureters (Fig. 2). The bladder was markedly distended (Fig. 3). A huge dilatation of the collecting system displaced the regional structures and appeared like massive polycystic kidneys.

After removing large amount of fluid from the sacs, the abdominal distension was reduced and the patient had symptomatic relief.

## DISCUSSION

Giant hydronephrosis is accumulation of more than 1 litre of fluid in the collecting system. When it existed the kidney and renal pelvis could extend across the midline and occupied the entire abdomen resulting in several symptoms or remained asymptomatic. GH was seen more often on the left side than the right side and more often seen in males than females [2,8,14]. GH is uncommon in adults and often misdiagnosed clinically [9]. Our case was young man.

The causes of GH are usually congenital anomalies, ureteropelvic junction obstruction, stones or urethral stricture [9,11]. Our patient with a huge dilatation of the bilateral pelvicalyceal system and ureters beside to urinary bladder massive fullness and the cause was the urethral stricture.

The patient symptoms were not specific but including the nausea, vomiting, continuous bilateral loin pain and abdominal distension due to presence of abdominal mass. Other symptoms were described in the literature; nocturia, fever, hematuria and weight gain [5,8,15].

The differential diagnosis of GH were considered massive ascitis, intraperitoneal and retroperitoneal cysts, pancreatic pseudocysts, ovarian cysts and tumours [5,12]. Ultrasound, excretory antgrade and retrograde urography had facilitated the diagnosis of GH. CT scan and MRI technology are very important in most cases for the diagnosis and they are the methods of choice in the differential diagnosis of GH with other intraabdominal cystic masses [2,4,16,17,18,19]. Our case was referred from ultrasound unit with multiple bilateral large abdominal cystic lesion. CT scan showed marked dilated bilateral pelvicalyceal system with sharp marginal delineation and remaining compressed thin renal parenchyma as well as tortuous and dilated both ureters. The bladder was full with the fluid.

The effectiveness of CT scan was well established in the diagnosis of the emergency case of the giant hydronephrosis. CT scan is very important for the

diagnosis and has several advantages; Firstly, accurate delineation of the margin of the dilated collecting system. Secondly, CT scan can distinguish the dilated collecting system which appeared as a large cystic lesion with low echogenicity at ultrasonography. Thirdly, the examination is quick and the diagnosis takes a short period of the time while MRI takes longer time. Intravenous urography is not liable to be performed for these emergency cases which spend long time beside to expected allergic reaction and renal toxicity for contrast media.

#### CONCLUSION:

GH is uncommon entity that might be considered upon the occurrence of huge abdominal cystic masses. In the literature GH usually contains 1-2 litres of fluid in the collecting system and it is more common in males and a similar case has rarely been described.

In adults can prove to be difficult and often misdiagnosed clinically. CT scan is the gold standard diagnostic modality for GH diagnostic accuracy.

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