GIANT HYDRONEPHROSIS

ORIGINAL
PROF-1974

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ABSTRACT... Objective: To study the clinical presentation and management of giant hydronephrosis. **Setting:** Civil Hospital Dadu and Urology Department SMBBMU Larkana. **Period:** March 2004 to march 2011. **Patients and methods:** 28 Patient with giant hydronephrosis treated. 18(64.3%) patients had unilateral and 2(7.1%)had bilateral pelvi ureteric junction obstruction, 4(14.3%) had ureteric stones and remaining 4(14.3%) had multiple renal stones. All patients were treated with definitive surgery ie pyeloplasty, nephroplication, ureterolithotomy, extended pyelolithotomy and nephrectomy. Six (21.4%) patients had elevated blood urea and serum creatinine level so initially treated by percutaneous nephrostomy and ureteric cathetrization. **Result:** 10 out of 28 cases of giant hydronephrosis showed improvement in the function and drainage as well as pelvi-calyceal system dilatation while 18 patients going for nephrectomy. **Conclusions:** Early referral and intervention is necessary for giant hydronephrosis to prevent infection and deterioration of renal function.

Key words: Hydronephrosis, PUJ Obstruction, Renal stone.

INTRODUCTION

Giant hydronephrosis is rare lesion and approximately 2000 cases a have been reported in the world literature since it was first described in 1746[1]. Hydronephrosis is arbitrarily termed "giant" when it contains over 1 L fluid or fluid over 1.6% of body weight[2,3]. Most cases of giant hydronephrosis are due to PUJ 0bstruction but also common in renal and ureteric obstructive disease . Usually diagnosed and treated in infancy or childhood but also discovered in young to middle aged people[10,11]. The commonest presentation of giant hydronephrosis with flank pain, flank mass and urinary tract infection and renal insufficiency[12]. We report 28 cases with definitive surgical procedures.

PATIENTS AND METHODS

28 patient (20 male and 8 females, mean age 27.9, range 12-40 years) with giant hydronephrosis, who presented between march 2004 to march 2011 were included in this study. 22 patients had unilateral and 6 had bilateral giant hydronephrosis. The commonest presentation was flank pain, followed by, flank mass and urinary tract infection and renal insufficiency . Renal values were abnormal in six patients, who had bilateral renal involvement. The preoperative evaluation included urine analysis, blood urea,serum creatinine,urine culture and sensitivety, IVU, ultrasonography and renal dynamic scintigraphy. Kidneys with a split GFR of <10 ml/m were considered unsalvageable. In six patients with split GFR of 10-15 ml/min a precutaneous nephrostomy was performed to predict more accurately the recoverability of function. Initially precutaneous nephrostomy helped to improve the abnormal renal profile and minimize subsequent surgical risks. The presence of giant hydronephrosis was established by intra-operative measurement fluid volume in the hydronephrotic sac. The primary surgery performed was an anderson hyne's reduction pyeloplasty in 5 cases, nephrectomy in 18 cases , ureterolithotomy in two cases and extended pyelolithotomy with nephroplication and nephropexy in 3 case by standarad technique.

RESULT

Definitive surgery was performed in 10 cases with male 7 and 3 female. The average age of the patients treated was 27.9 years (range 12-40 years). The six patients had bilateral giant hydronephrosis with abnormal renal profile. 12 patients had positive urine culture and commonest organism was E.coli. The primary surgery performed was an Anderson Hyne's reduction pyeloplasty in five cases, nephrectomy in 18 cases, ureterolithotomy in two cases and extended pyelolithomy with nephroplication and nephropexy in 6 cases.

DISCUSSION

Giant hydronephrosis is an uncommon clinical condition. The most common cause of giant hydronephrosis is PUJ obstruction. Other causes included Renal and ureteric stone disease[1,2,4]. In our study common cause of giant hydronephrosis was PUJ obstruction and stone disease which is compareable to other studies[2,7].

Common manifestation of giant hydronephrosis are flank pain and an abdominal mass. Other manifestations includes haematuria, fever, sepsis and renal failure which is compareable toTomberi etal[1]. Sorrentino[3] distinguish hydronephrosis from pyelectasis in that hydronephrosis entails dilatation of not only the extra renal pelvis but also intra renal collection systems, and the kidney in converted into fluid sac with a thin crotex. Deming[6] and Wu and Sun[11]showed that intrarenal hydronephrosis leads to decreased intra renal blood flow and glomerular and tubular atrophy and fibrosis. However, such kidneys function poorly or not at all are ablated. In patients with bilateral pathology salvage of renal function, is justified . We treated 10 patients with definitive surgery for the underlying disease i.e pyeloplasty in 5 cases, ureterolithotomy in two cases and extended pyelolithotomy which compareable to Mountney etal[5].

In giant hydronephrosis, the collecting system in grossly dilated and the kidney is a fluid filled sac with a thin cortex. As a result, the peristaltic activity of the collecting system is grossly compromised and it may not drain effectively even when the obstruction is removed surgically. This may result in urinary stasis and the complications of stone formation and infection . Urinary drainage from the kidney to the bladder in these cases would appear mainly to the fuction of ureteric peristalsis, with drainage from the pelvis into the upper ureter being essentially by gravity. Complete dependency would logically enhance this gravity effect. Therefore, we performed nephroplication and nephropexy in six case for dependent drainage. blunt etal[10], Monika and Santosh[9] and goswami et al[8] reported similar operation for giant hydronephrosis with satisfactory results (Table-I).

Table-I. Showing studies of renal salvage in giant hydronephrosis

Study	Cases	Renal salvage
Hemal AK et al 1998	25	8 (32%)
Wu CC and Sum GH 2011	18	5 (27.8%)
Blunt V et al 2011	35	10 (28.6%)
Monika B et al 2012	45	15 (33.3%)
Our study 2011	28	10 (35.3%)

CONCLUSIONS

Giant hydronephrosis is an extremely rare condition but due to late referral,poverty, illiteracy, cases increases day by day, so early diagnosis and intervention is necessary to prevent infection and deterioration of renal function.

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"Knowledge speaks, but wisdom listens."

Jimi Hendrix