

Unilateral hydronephrosis in two Ugandan patients

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We report two cases of unilateral hydronephrosis with irreversible renal damage requiring nephrectomies. Both patients were males with the right kidneys affected. One patient was 13 years of age and the other one was 25 years old. The contralateral kidney in the adult patient was unremarkable, while the remaining kidney in the child shows evidence of hypertrophy.

Introduction

Hydronephrosis refers to dilatation of the renal pelvis and calyces, flattening of the renal papillae and thinning of the renal cortex¹. Hydronephrosis can be unilateral or bilateral depending upon the level of the urinary tract obstruction². Obstruction can occur at any level of the urinary tract from the renal calyces down to the urethral meatus³. Blockage at the level of the urinary bladder or below may result in bilateral hydronephrosis. When the obstruction is at the level of the ureter or above, unilateral hydronephrosis is the rule¹. Unilateral hydronephrosis may remain quiescent without symptoms until irreversible renal damage has occurred⁴. There are very few case reports on unilateral hydronephrosis from Africa. We report two patients who presented with unilateral hydronephrosis at Mbarara University Teaching Hospital, Uganda and both had a unilateral nephrectomy.

Case reports

Two cases of unilateral hydronephrosis occurred in male patients, one was 13 years old and the other was 25 years of age. Both patients presented with right-sided cystic abdominal masses which were confirmed as hydronephrosis by ultrasonography. At operation, the contralateral kidney in the 13-year-old showed evidence of hypertrophy. The causes of the obstruction leading to hydronephrosis was not identified in either case. Both patients had an unremarkable post-operative recovery with adequate renal function and were discharged two weeks after surgery. On gross examination, the nephrectomy specimens showed markedly dilated pelves and calyces with thinning of the renal cortex. Histological sections from the residual renal tissues revealed tubular dilation, glomerular atrophy and areas of fibrosis. Focal areas consisted of necrosis with accompanying inflammatory reaction

Discussion

Unilateral hydronephrosis is very rare. It is more frequent in children than in adults⁵. In children congenital anomalies account for the major causes of unilateral hydronephrosis. These include narrowing of the uretero-pelvic junction and anomalous location of ureter, Urethral valves, ureterocele, retrocaval ureter and an aberrant renal artery compressing the ureter¹. Unilateral

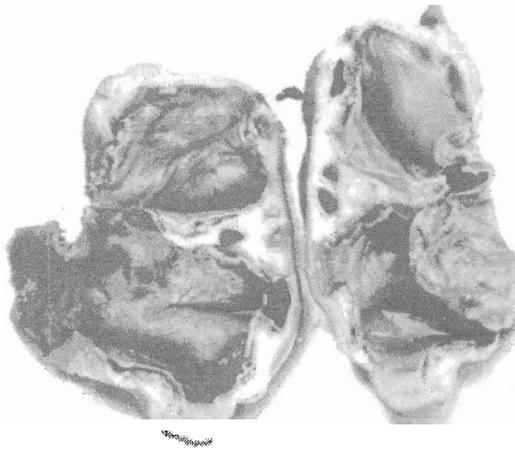


Fig 1 - Cut surface of an hydronephrotic kidney in 13 year old male shows dilatation of the renal pelvis and thinning of the renal cortex.

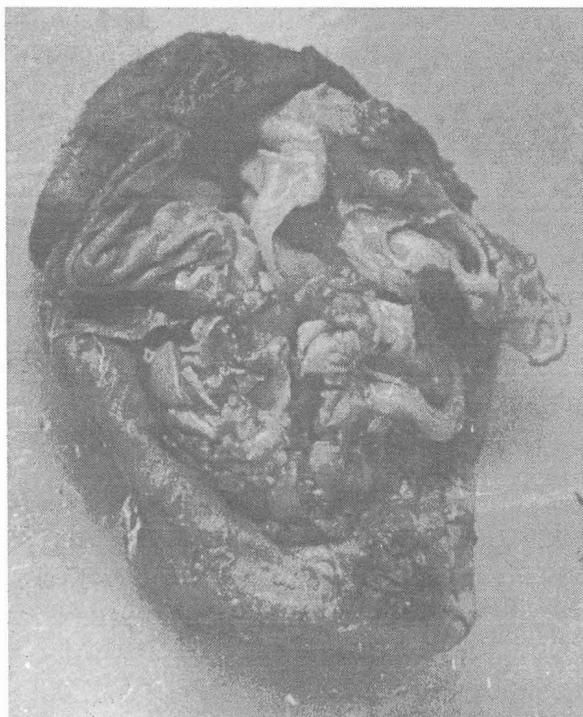


Fig. 2: - Operative specimen of an hydronephrotic kidney in a 25 year old male with marked dilatation of pelvicalyceal system.

hydronephroses in adults are usually due to acquired factors such as renal calculi, schistosomiasis⁴, surgical ligation of the ureter, an obstructing intra-abdominal or pelvic tumour, retroperitoneal fibrosis and endometriosis⁶ and functional disturbance in the peristalsis of the collecting system of the kidneys.

Studies by Brandell et al⁷ and Koff et al⁸ have demonstrated that the contralateral normal kidneys in most children with unilateral hydronephrosis can rapidly compensate by increasing in size.

Often unilateral hydronephrosis may be discovered on routine physical examination. Occasionally the aetiology of the obstruction, such as renal stones, may produce symptoms which draw attention to the hydronephrosis. Dharan et al⁹ have reported a case of unilateral hydronephrosis associated with polycythaemia, hypertension and myocardial infarction. The hypertension was due to the increase in renin release by the affected kidney. Polycythaemia was also associated with secondary increased erythropoietin production by the obstructed kidney. Nephrectomy is usually indicated in severe unilateral hydronephrosis with permanent renal loss in order to prevent the development of pyonephrosis and septicaemia in these patient^{4,10}.

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