

DEFINITION

1. Hydronephrosis is a condition in which there is dilatation of the renal pelvis.

CLINICAL MANIFESTATIONS

2. These depend upon the site of the obstruction and on whether it is acute or chronic.
3. Chronic unilateral hydronephrosis may be asymptomatic if the other kidney is functioning normally.
4. There may be symptoms arising from the lower urinary tract such as urgency or hesitancy of micturition, incontinence or nocturia.
5. There may be intermittent flank pain or renal colic.
6. The condition may present as renal failure, which may be acute or chronic.
7. Other forms of presentation include recurrent urinary tract infection, hypertension, polycythemia and the various syndromes resulting from renal tubule dysfunction.

AETIOLOGY

8. Hydronephrosis arises because of obstruction to the urinary outflow from the kidney. The causes of such obstruction are usually divided into three groups -
 - 8.1. **causes within the lumen of the urinary tract.** These include calculus, blood clot, sloughed papilla (in diabetes, analgesic abuse or sickle cell disease), tumour of the renal pelvis, ureter or bladder.
 - 8.2. **causes within the walls.** These include pelvi-ureteric neuromuscular dysfunction (a congenital condition which accounts for 10% of bilateral cases), ureteral stricture, uretero-vesical stricture, congenital megaureter, congenital bladder neck obstruction, neuropathic bladder, urethral stricture, congenital urethral valve and pinhole meatus.
 - 8.3. **causes outside the urinary tract.** These include pressure from pelvi-ureteric compression (from bands or aberrant vessels), tumours, retroperitoneal fibrosis, accidental ligation of the ureter, retrocaval ureter, prostatic obstruction and phimosis.

9. Obstruction with continuing urine formation results in a progressive rise in the intraluminal pressure and dilation of the system proximal to the site of the obstruction. In the early phase of obstruction, the kidney becomes oedematous and haemorrhagic. If the obstruction persists, the kidney enlarges because of dilation of the renal pelvis. This leads to compression and thinning of the renal parenchyma, initially affecting the papillae and medulla and later the renal cortex. With long standing obstruction, the dilated calyces and pelvis are surrounded by only a thin rim of renal parenchyma. In the long term, the kidney may reduce in size due to atrophy. If the obstruction is slowly progressive, the dilation may be gross, holding as much as 2 to 3 litres of urine. If it is acute, the degree of dilation tends to be less.

CONCLUSION

10. **Hydronephrosis** is a condition where the renal pelvis is enlarged. It results from obstruction to the outflow of urine from the kidney, there being many causes of such obstruction. These causes have been listed above.

REFERENCES

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