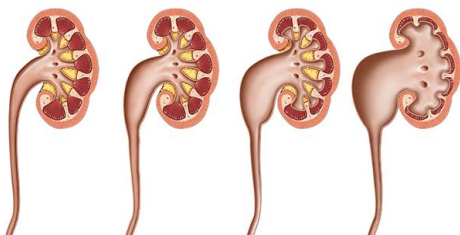




Indian Association of Pediatric Surgeons

Patient Information Sheet

HYDRONEPHROSIS



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What is hydronephrosis ?

Hydronephrosis is swelling in kidney due accumulation of urine. This urine is not infected and it may occur due to resistance in outflow of urine from kidney to ureter or urinary bladder. The cause for hydronephrosis can be manifold and the cause requires treatment.

What causes hydronephrosis and how common is it ?

Pelvi-ureteric junction obstruction (PUJO) is most common pathological cause of hydronephrosis. It is more common on left side but may happen on both sides. It is more common in males.

This obstruction may be due to blockage in the lumen by stones, stricture or birth defect in wall where normal muscle in this region is deficient and replaced by abnormal deposition of fibrous tissue. It may also occur due to pressure from outside lesion like tumour or abnormal blood vessel.

What are the symptoms ?

Babies with hydronephrosis may not have any symptoms. This condition may be incidentally diagnosed on ultrasound. At times baby may have swelling on the belly, on one or both sides in flanks. This may be detected by mother while bathing the baby. Fever, difficulty in passing urine if there is associated urinary tract infection. Older children may complain of pain in flanks. It may present with blood in urine.

How is it diagnosed ?

Antenatally by ultrasonography. Subsequently with serial ultrasound and radionuclide scans to keep a watch on obstruction and renal function. Usually it is classified as mild, moderate and severe hydronephrosis.

How is hydronephrosis managed before and after birth and what type of surgery is performed ?

Not all hydronephrosis requires treatment. But all those babies who do not require surgery do require observation till a particular age. One sided mild to moderate hydronephrosis is usually observed serially with ultrasound to see their natural progression. Usually no intervention is done

before birth. After delivery, babies undergo USG in first week of life; base line renal functions like blood urea and serum creatinine are checked. This is followed by a study to see the renal functions at one month age called as renal scan. This study shows how slowly urine is outflowing from kidney to bladder suggesting degree of blockage. It also shows differential functions of kidney. Depending on that further management is planned. If function is above or equal to 40% with renal pelvis dilatation in USG 10-15mm, your surgeon may wait for surgery. However, if functions further deteriorate or dilatation further increase, your child will require surgical correction.

Sometimes in specific situations a study called micturating cystourethrogram (MCUG) is done to see for retrograde flow of urine from bladder to kidney.

Surgery performed is known as Pyeloplasty. It may be done by laparoscopic or open technique depending on available expertise and facility. It may also be done using robotic technique if available. Basic principle of procedure however remains same in all which is removal of affected segment and resuturing of pelvis with normal ureter. There is additional advantage of cosmesis and early discharge from hospital in laparoscopic technique.

Are there any alternatives to surgery ?

In cases where the obstruction is proven and the renal function is showing signs of deterioration there is no alternative to surgery.

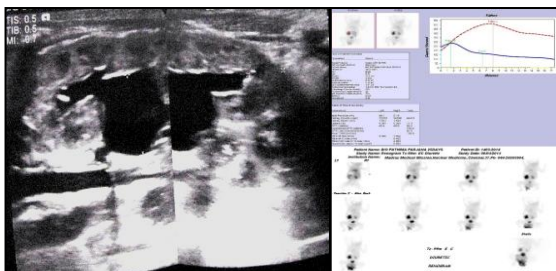
What are the possible complications / what happens after the operation ?

Possible complication of this condition may include deterioration of kidney function to a poor level or kidney may become non-functioning. This may happen if there are repeated infections or obstruction is severe. In such situation your surgeon may advise removal of affected kidney. Following surgery, there may be urine leakage from drain tubes. This may subside of its own. Your surgeon may put a fine tube across the suturing area (DJ stent) which may remain

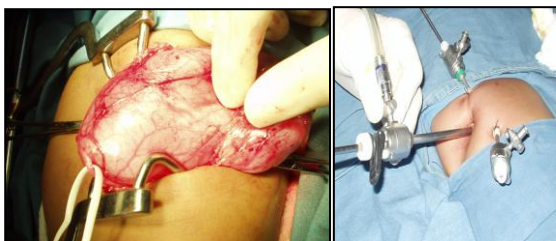
inside for 6-8 weeks. Subsequently it will be removed by doing a small procedure called cystoscopy. There may be infection which requires antibiotics or red colour urine sometimes after surgery which subsides of its own. Renal function after successful surgery may improve or remain same. But if it further deteriorates or lump appears in belly again, it may require a second procedure.

What is the outlook or future of these children ?

Success rate of this surgery is high and ~ 95% children with one sided hydronephrosis due to PUJO do well after surgery. The hydronephrosis may persist for sometimes after surgery and should not be matter of concern initially. Prophylactic antibiotics maybe required for up to 6 weeks and follow up ultrasound scans at 3 and 6 months. In severe cases there maybe growth retardation.



Ultrasound scan & radionuclide scan for diagnosis of hydronephrosis & assessment of renal function



Operation by open & laparoscopic techniques