CASE REPORT

Bilateral Hydronephrosis with Recurrent Infections

by

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Abstract

A case of bilateral hydronephrosis due to a congenital hereditary anomaly was reported. The operation was performed to remove the right kidney and ureter. Correction of the obstruction in the left ureter resulted in the better functioning of the left kidney, although we cannot be sure in the long run.

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Introduction

Hydronephrosis caused by congenital obstruction of the urinary tract is not rare in infancy and childhood. If the obstruction is not corrected, progressive parenchymal damage may ensue, especially if infection occurred. The damage may be irreversible and finally causes renal failure and death. Symptoms of hydronephrosis may appear when infection, obstruction of the urine flow or decreased renal function is present (Whitaker, 1975).

The hereditary aspects of this condition have received little attention and until 1958 in a review of the genetic aspects of urology, hydronephrosis was not mentioned (Finn and Carruthers, 1974).

Mayor et al. (1975) reported 24 cases with severe hydronephrosis in which 20 of them had bilateral hydronephrosis and 4 cases with a solitary hydronephrotic kidney. In this paper we report a case of bilateral hydronephrosis in a girl suffering from pyelonephritis thought to be a congenital and hereditary anomaly.

Case report

A 6-year-old Indonesian girl came with complaints of back pain, swelling of the cheeks and eyes, polyuria and obstipation. Six months before admission the girl had dysuria, the urine looked like pus or cloudy. Urine volume was normal. The girl had been sick for 2 years but did not come regularly to the hospital.

She was the 5th child of 6 siblings. The first child was stillborn, the 2nd suffered from back pain and haematuria. The 4th child was deaf and mute, and their father had tuberculosis. When the girl was brought to the hospital on January 7, 1976 she looked active, no swollen eyes nor cheeks. Her blood pressure was 110/70. Heart and lungs were normal, there was no edema nor ascites. Urine examination revealed protein +, leucocyte 30 - 40/HPF, erythrocyte 1 - 2/HPF, cylinders were not found. Blood examination showed: Hb 11.7 gm%, leucocyte 9.800/cmm, differential count was within normal limit. The blood chemistry was: albumin 3.66 gm%, globulin 2.71 gm%, total protein 6.37 gm%, ureum 35 mg%, creatinine 1.23 mg% and cholesterol 208 mg%. Urine culture showed coliform bacilli more than 250.000/cc. The diagnosis made was Chronic Pyelonephritis.

During hospitalization several urine cultures were made, besides, urine examination and X-ray photos were performed in the attempt to find the cause of the recurrent infections. There were persistent bacteria of various kinds in the urine after 6 consecutive urine cultures although the patient was treated with antibiotics. Plain film of the abdomen revealed no radio-opaque stone in the urinary tract. The IVP suggested left hydronephrosis, non functional right kidney (Figure 1) and megavesica (Figure 2). Renogram showed bilateral decreased function of both kidneys. Cystoscopy with retrograde pyelography

was done but the catheter could only be placed in the right ureter. There was an obstruction of the left ureteral orifice. Trabecullar formation on the vesical wall was not present. Retrograde pyelography performed after cystoscopy showed that the contrast media filled the ureter as high as L 3 - L 4 and then descended into the vesica (Figure 3). The right kidney could not be explored. We had the impression that the right kidney may be aplastic or not present at all. The left hydronephrotic kidney might be due to an obstruction of the ureteral orifice. Laparotomy was performed to correct the obstruction of the left kidney.

During the operation the right kidney was also explored and showed a severe stage of hydronephrosis with an obstruction of the pelvi-ureteral junction and 1/3 of the distal ureter. At the site of the distal obstruction a duplicate ureter was found. The right kidney and ureter were removed. An ureteroneocystostomy was done to correct the obstruction found in the left ureter orifice.

Pathological examination of the right kidney and ureter revealed a late stage of hydronephrosis and a true diverticle of the ureter with secondary infection. Post-operative condition of the child was satisfactory, the urine was sterile and a better function of the left (and only) kidney was observed from the renogram which was done 2 months later.

Discussion

The child in her 6th year of life was brought to our hospital with symptoms of urinary tract infection. The examination performed suggested the possibility of congenital bilateral hydronephrosis. Among the members of her family some had renal diseases and some indicated the presence of urinary tract anomaly (Figure 4). Her mother and aunt (her mother's younger sister) suffered from hypertension. Her uncle (her mother's younger brother) died of chronic renal failure. Her older sister suffered from haematuria and back pain. Her mother's aunt also suffered from renal disease. We are thinking of a hereditary factor involved in this case.

Frey et al. (1974) reported a family with several kidney deformities in three generations. Finn and Carruthers (1974) reported 2 families, who had 6 hydronephrotic members. In our case the most probable cause of hydronephrosis was thought to be a congenital obstruction of the left ureteral orifice, right pelviureteric junction and 1/3 distal of the right ureter. We are considering a close relation between these anomalies, the diverticle of the ureter and the mega vesica which were also found in this child.

In our case the infection was already present for 2 years. It might be due to a decreased renal function. We cannot be sure, whether the immediate operation which was successful, will always be good for the patient. Tambunan (1976) suggested that chronic infection resulted in a poor prognosis. Some authors suggested to do the operation whithin the first year of life (Major et al., 1975).

FIG. 3: *Retrograde pyelography. The contrast media filled the ureter as high as L 3 - L 4, and then descended into the vesica*

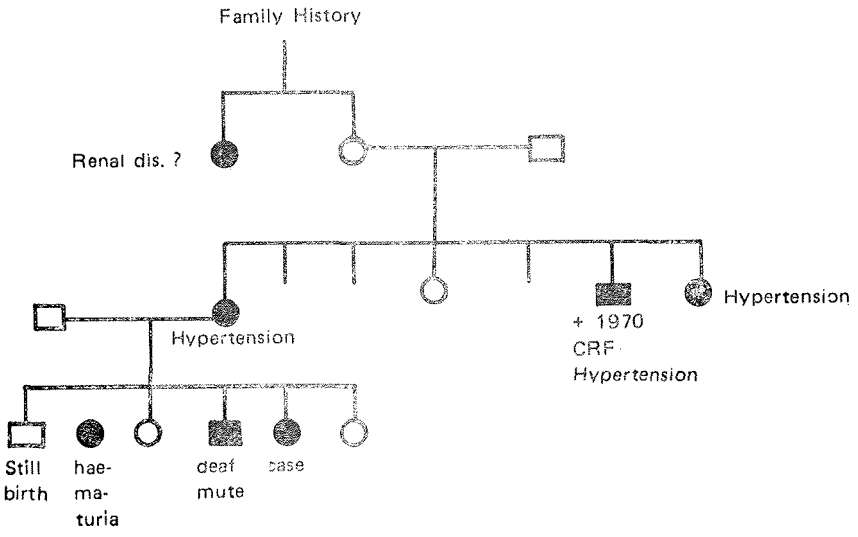

Fig. 4

FIG. 1 : *The IVP which suggested left hydronephrosis and non functional right kidney*

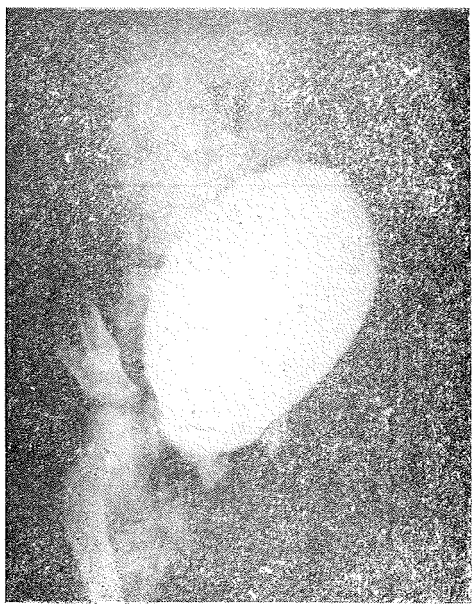

FIG. 2 : *The mega vesica*

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