POSTERIOR URETHRAL VALVES : A COMPARISON OF TWO CASES IN EARLY INTRAUTERINE PERIOD

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Introduction

Of the various urogenital anomalies detected, the incidence or urinary bladder outlet obstruction in the antenatal period is rarely reported. The two cases represented here show the diagnostic features of posterior urethral valves on which the management is decided. The occurrence of posterior urethral valves in siblings and in consanguineous marriage is illustrated here. One case was diagnosed at the earliest period of 18 weeks.

Case No. I

This 20 year old female had her first delivery by a Caesarean section for breech. The male child underwent a suprapubic cystostomy for posterior urethral valve and died in the post operative period. In the present pregnancy of 18 weeks duration, scanning was advised because of oligohydramnios.

The echo features are given in the following fig. 1. A sagital section shows the foetal abdomen very close to the placenta and there are no evident amniotic fluid pockets. Only the left kidney with the hydronephrotic changes is seen here due to the angulation of the transducer. There is a much distended bladder at this age ending in a moderately dilated posterior urethra. In fugure 2, the bladder is seen extending higher up into the abdomen, whereas it is confined to the pelvis in normal cases. The right kidney is also seen with hydronephrotic changes in this view. The other biometric parameters were normal and the gestational age was corresponding to 18 weeks.

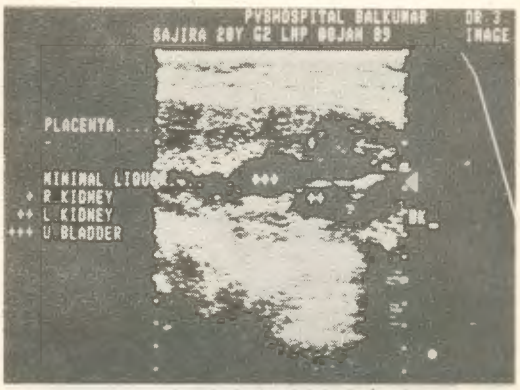

Fig. No. 1
There is oligohydramnios and evidence of obstructive uropathy.

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Case No. II

She was a 22 years old fifth gravida. The obstetrician had asked for an ultrasound scanning because she had a bad obstetric history, although the uterine size was normal. The scanning done in the twenty second week of gestation showed (Fig. 2), a dilated bladder between the hydronephrotic kidneys. The magnified view of the kidneys show that a major percentage of abdominal girth is occupied by them. The difference in this patient is that there is minimal quantity of liquor surrounding the foetus indicating the possibility of partial obstruction to urine flow. The posterior urethral dilation was noted in this case also (not shown in the pictures). The gestational age was corresponding to 20 weeks showing the retarded growth.

Discussion

These two cases represent the two types of presentation of foetal bladder outlet obstruction resulting from posterior urethral values. The reported incidence varies from 1 in 5000 to 1 in 8000 boys. Three types have been described by Young et al (1919), depending upon the regions involved in relation to verumontanum.

Fig. 2
Magnified abdominal transverse section showing bilateral hydronephrosis

The basic pathology is due to abnormal anterior insertion of the Wolffian ducts resulting in corresponding circumferential ridges.

In some cases the differentiation of posterior urethral valves from urethral stricture and prune belly syndrome may be difficult. In the latter, the dominant in utero appearance is of a distended abdomen and spontaneous resolution of the same. If the foetal sex is female, the possibility of Megacystis - Microcolon - Intestinal Hypoperistalsis Syndrome (MMIH) has to be considered (Krook, P.M., 1980). A dilated posterior urethra helps to exclude persistant cloaca and urethral agencies.

Once the features of posterior urethral values are identified the chances from both genito urinary tract anomalies as well as extra genito urinary anomalies (in 7% of cases) are to be suspected and excluded. Chromosomal abnormalities (in 8% of cases) have also been reported among these cases (Sabbagha, R.E. 1987). However it is to be stressed that the valves as such are not demonstrable by echoes (Romero, R. et al, 1988).

These cases represent the grades of severity of obstruction due to posterior urethral values. The first one representing a case of complete obstruction and the second suggesting the possibility of partial obstruction to urine flow; verified by serial scanning. More over, a genetic basis for posterior urethral valves is exempli-

fied in the first case (Doraiswamy, N.V., 1983).

The problems faced are regarding the management once the diagnosis had been made. This can be reliably determined by studying the foetal urine chemistry after a bladder puncture (Glick, P.L., 1985). If the poor prognostic signs are more and associated chromosomal abnormalities are detected, the choice is for either termination or for a wait and watch policy. Foetuses with sufficient quantity of liquor (as in Case No.II) have a better prognosis compared to those with severe oligohydramnios. In those cases where the diagnosis is made later and the parameters for pulmonic maturity are met, the foetus can be delivered and taken up for active treatment in a specialised centre.

The recent introduction of intrauterine surgery has opened up new hope for foetuses with lower urinary tract obstruction. The intervention can be either preventive or at the time of considerable reduction of liquor (Harrison, M.R., 1984), using a vesico amniotic shunt. The prognosis is often worse when the consideration is detected early. The end results are (1) death of 39-50% of affected neonates (2) growth retardation [though can be better after surgery] (3) progressive renal failure.

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