ANTENATAL DIAGNOSIS OF FETAL GENITO URINARY TRACT DISORDERS BY ULTRASOUND

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SUMMARY

Antenatal diagnosis of fetal anomalies incompatible with life enables the obstetrician to decide for early termination and fetal therapeutics. Real time ultrasound helped to detect 15 identifiable congenital anomalies out of the 400 patients scanned. Out of these, 3 belonged to the genito urinary system-2 polycystic kidneys and one renal agenesis. The incidence of abnormalities of urinary system was 0.7%.

Introduction

Numerous fetal abnormalities can be identified by ultrasound. Early diagnosis helps the obstetrician in early termination of pregnancy or fetal therapeutic procedures and in some cases the mode and timing of the delivery may be changed.

The fetal kidneys are seen in the mid abdomen on either side of the spine, the renal tissue being more echolucent than the central echogenic pyelocaliceal system (callen) and one or both kidney's can be visualised in 90% of patients at 17-22 weeks of gestation (Lawson 1981). Cystic abnormalities of fetal kidneys are more easily seen by ultrasound than the solid lesions since there is greater contrast with the surroundings.

Material and Methods

Four hundred pregnant women were scanned by real time linear ultrasound (Siemens Imager 2380), for various indications. Full bladder technique was applied where necessary. Scan was repeated where indicated and in one case Lasix test (Harrison 1981) was done to confirm the presence of fetal kidney and urinary bladder.

Observations and Results

Out of the 400 cases, 15 cases of identifiable congenital abnormalities were detected (3.7%). Out of these, 11 cases were neural tube defects, 1 case of fetal ascitis, 2 cases of polycystic kidney and 1 case of absence of kidneys and urinary bladder.

TABLE I

	Cases	%
1. Polycystic kidney	2	.5
2. Renal + Urinary Bladder Agenesis	1	.2

The incidence of Geni to urinary anomalies was 0.7%.

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Accepted for publication on 29-7-86.

Management of 3 cases

Polycystic Kidney was seen ultrasonographically in 2 cases at 28 and 22 weeks gestation respectively (Figs. 1 and 2). The first cases had a vaginal preterm delivery at 34-36 weeks. In the second case along with polycystic kidney placenta pravia type III was observed and the patient, when explained about the anomalies, gave consent for a therapeutic termination and tubal ligation. In this case, hysterotomy and tubal ligation was done under general anaesthesia. The foetus was subjected to a postmortem examination.

Autopsy of the foetus revealed large bilateral polycystic kidney as shown in Fig. 3. The case with renal and urinary bladder agenesis first presented in the 6th month of pregnancy with loss of foetal movements. A sonar scan was performed and because of the severe oligohydramnious the fetal details were not very clear. The fetal heart was visualised, the fetal limbs were not properly visualised and the fetal urinary bladder and kidneys were not visualised. A Lasix test was done to confirm the presence/absence of urinary bladder, after ½-1 hour of the injection the fetal urinary bladder and kidneys were still not visualised.

The foetus was still born after 1 week and the following anomalies were seen. There was unipoedia of lower limbs, the external genitalia and anal opening was absent. Radiological examination of the foetus revealed a single fused femur and single tibia with only 2 digits, absent sacrum and pelvic bones.

Autopsy revealed absence of fetal kidney, urinary bladder and sexual organs. The intestines terminated blindly at the level of the rectum forming a blind loop.

Discussion

Congenital anomalies of the urogenital tract are rare. By ultrasonography a quick and early diagnosis of most of the abnormalities can be made. In the present study 400 cases were scanned routinely out of which 3 cases of gross fetal urogenital anomalies were identified. Early identification helped us in planning the further therapy of these cases.

Reference

1. Harrison, M. R.: J.A.M.A., 246: 635, 1981.

See figs on Art Paper IV