Prenatal Sonographic Features of Penoscrotal Transposition

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The prenatal sonographic detection of genitourinary abnormalities has improved because of technical advances. The external genitalia can generally be imaged on routine prenatal sonography and may yield important information about potential defects. Here we report the sonographic features of penoscrotal transposition.

Case Report

A 23-year-old woman in her first pregnancy was referred for second-level sonography with a diagnosis of ambiguous genitalia in the fetus. She was in her 35th week of pregnancy. There was no history of consanguinity. Sonography was done with a Philips HDI 5000 system and a convex 2- to 5-MHz broadband probe (Philips Medical Systems, Bothell, WA). Fetal biometric measurements corresponded to her period of amenorrhea.

On a sagittal scan of the lower abdomen and perineum, the scrotum was shown to be prepenile in position. The scrotum was shown between the penis and the insertion of the umbilical cord into the abdominal wall (Fig. 1). On an axial scan, the bifid scrotum was shown as 2 separate oval scrotal sacs, each containing a testis in it (Fig. 2). A little caudal to this section, the penis was shown between the scrotal sacs (Fig. 3). The penis was short with a broad tip and ventral curvature, characteristic of hypospadias (Fig. 4). On a color Doppler study, the urinary jet was shown in the ventral aspect of penis, corroborating hypospadias (Fig. 5). These features are diagnostic for penoscrotal transposition with a bifid scrotum and hypospadias.
A detailed search did not reveal any other anomaly. The pregnancy continued until term, and a cesarean delivery was performed. The neonate was confirmed to have penoscrotal transposition (Fig. 6). He also had a low anal anomaly of an incomplete, covered anus, which was corrected by a cutback procedure.

Discussion

The sonographic appearance of several malformations of the fetal perineum and phalluslike hydrocele, ambiguous genitalia, megalourethra, concealed penis, hypospadias, and cloacal anomalies have been described previously, but to our knowledge, the sonographic features of penoscrotal transposition or prepenile scro-
tum have not been reported. External genitalia characterized by malposition of the penis in relation to the scrotum with a severe degree of hypospadias are rare anomalies. In such cases, the scrotum is usually bifid.

Embryologically, penoscrotal transposition results from delay, failure, or incomplete migration of the labioscrotal folds caudal to the penis. The condition can be associated with other anomalies, such as urogenital, lumbo-sacral, and anorectal malformations. It is seen as part of del(13)(q22) syndrome. It is known to be familial. In one series, the incidence of penoscrotal transposition was reported as 7.7% of urogenital anomalies. The condition is clearly shown on prenatal sonography. It is shown as a prepenile scrotum, appearing between the penis and the umbilical cord insertion into the fetal abdominal wall. A bifid scrotum is shown as 2 separate scrotal sacs.

The characteristic broad, blunt tip of a ventrally curved short penis is evidence of hypospadias. Color Doppler sonography will confirm the ventral urinary jet. These features are characteristic of penoscrotal transposition with a bifid scrotum and hypospadias. Recognition of this anomaly should lead to a more detailed search for additional anomalies. This case had a low anal anomaly of an incomplete, covered anus, a condition that was not shown on the prenatal scan.
References


Figure 6. Postnatal photographs showing penoscrotal transposition (A) and hypospadias (B).