8 Hunchbacks, Dwarfs, and Giants

Renal anomalies can be encountered and diagnosed during screening abdominal examinations. But in most cases the anomaly has been diagnosed with an IVU. Ultrasound is not then of any interest.

We shall merely recall ptosis of the right kidney, often interpreted at physical examination as a tumoral process. Ultrasonic examination with the patient in decubitus and in the erect position readily shows that the "mass" corresponds to a normal kidney, located frankly below the last rib, and bulging through the abdominal wall.

8.1 Horseshoe Kidneys

A horseshoe kidney is considered when a medial abdominal mass is found (Fig. 8.1). Real time makes it possible to demonstrate a continuity between the mass and the lateral paraspinal part of the kidneys. The double obliquity of the renal crescent makes it difficult to obtain global sections of the abnormal kidney (Figs. 8.2, 8.3). It is important to demonstrate that continuity since usually there is no pyelovascular central area in the medial, symphyseal part of abnormal kidneys: their central part could be confused with a tumoral mass. Indeed, the section pattern of the central part of a horseshoe kidney can mimic a mass, whether retroperitoneal or digestive. Is it necessary to carry out an IVU once horseshoe kidneys have been identified on ultrasonic scans? Not in our opinion, if there are no clinical symptoms and no ultrasonic parenchymal abnormalities.

![Fig. 8.1 a-c. Horseshoe kidney. a Normal appearance of the right kidney (right sagittal scan). Note however depression of central zone in lower pole. b Medial sagittal scan displays a mass (arrows) with a renal pattern in front of the aorta. c Scanning planes used in a and b](image-url)
8.2 Miscellaneous Anomalies

Unilateral fused kidneys, malrotated kidneys, or lobulated kidneys (Fig. 8.4) can be misinterpreted as being due to an inflammatory process (chronic pyelonephritis) or a tumor: IVU will permit a more accurate diagnosis; some tumoral patterns can require CT scanning.

In duplicate or supernumerary kidneys, the increased renal size and the separation of the reflective zone into two distinct areas can be relevant. On the other hand, separation of the reflective central zone into the distinct areas totally lacks specificity when encountered alone, without an increased renal length: it usually accompanies mere columnar hypertrophy (see Chap. 1) but careful oblique scans can display the duplicated cavities. In duplicate or supernumerary kidneys the narrower symphysis could be confused with the cortical atrophy of chronic pyelonephritis. In such cases only, doubtful images displayed on ultrasonic scans will be checked by an IVU.

8.3 Absence of Kidney; Ectopic Kidneys

In congenital aplasia, the lumbar fossa is empty while the single contralateral kidney is enlarged due to compensatory hyperplasia (Fig. 8.5). An ectopic kidney must be looked for, especially if there is no hypertrophy. Most ectopic kidneys are located in the pelvis (Fig. 8.6). Demonstrating them is not always easy because of intestinal gas getting in the way. A full bladder will help. IVU can be carried out in cases of renal aplasia. Conversely, ultrasound will necessarily follow the urographic disclosure of a nonfunctioning or absent kidney.

Renal aplasia can be very difficult to diagnose on ultrasonic scans. The colon moves into the anatomical depression whose normal renal occupant is