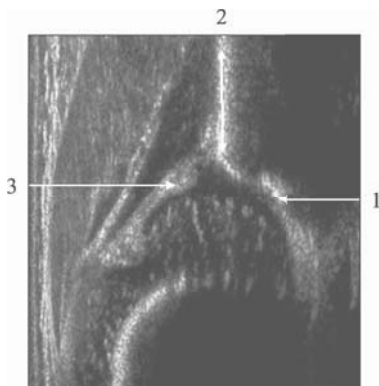


4 Identifying the Anatomy and Checking the Landmarks and Tilting Effects



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Before a hip sonogram can be evaluated, the echoes on a sonogram must be identified as anatomical structures in a methodical way. Once this has been done, the sonogram should be checked to see whether it meets the criteria for the standard sectional plane. The anatomical identification should always be completed prior to checking the sectional plane landmarks, never the reverse.

Tilting effects are checked last (Chap. 12).

4.1 Anatomical Identification

In order to avoid mistakes, the anatomical structures should always be identified in the following order:

1. Chondro-osseous junction (epiphyseal plate of the femur)
2. Femoral head
3. Synovial fold (to avoid confusion with the acetabular labrum!)
4. Joint capsule (avoid confusion with an inter-muscular septum)

5. Acetabular labrum (see help points in Sect. 2.5.2)
6. Invariable anatomical sequence of the acetabular roof from lateral to medial
 - a. Labrum
 - b. Cartilage acetabular roof
 - c. Bony socket
7. Define the osseous rim (=the point where the concavity of the socket turns to a convexity) (see Sect. 2.5.4)

4.2 Checking the Landmarks

Following the identification of the anatomical structures, the sonogram is examined to check whether it is in the correct sectional plane. To define a plane in 3D, three coordinates or landmarks are required.

For a diagnostic, measurable sonogram, the three landmarks that must be present are: the

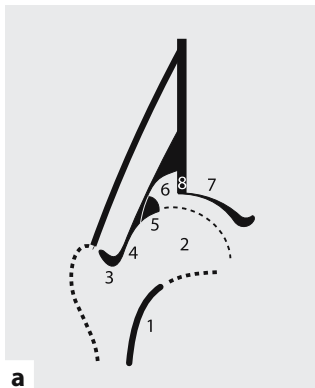
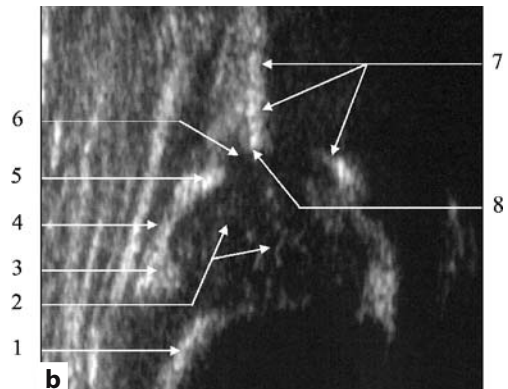


Fig. 4.1. a Correct order of the anatomical identification of infant hip sonographic image: 1, chondro-osseous junction; 2, femoral Head; 3, synovial fold; 4, joint capsule; 5, acetabular labrum; 6, hyaline cartilage pre-



formed acetabular roof; 7, bony part of acetabular roof; 8, bony rim: turning point from concavity to convexity. **b** Correct order of the anatomical identification of an infant hip sonographic image (see a)