Clinical examination (positive Ortolani sign [=click of entry] or positive Barlow sign [=click of exit]) remains the gold standard diagnostic tool but ultrasonography (US) has gained popularity worldwide as a screening tool in newborns and infants. The routine use of US in the diagnosis and treatment of DDH was pioneered by Graf in Austria in the 1970’s. Infant hip ultrasound imaging should be performed by trained, experienced personnel in 4–5 weeks and potential follow up in 11–12 weeks of infant’s life (in cases of newborns with severe hip instability on clinical examination at birth, some investigators advise that US examination should be performed earlier at the age of 2 weeks to document those more severely affected and initiate earlier treatment). The method includes static and dynamic joint control. The static US method (introduced by Graf) is a standardized approach for: (a) The assessment of acetabular morphology and (b) the measurement of α and β angles, for the quantification of bony socket and cartilaginous acetabular roof, respectively (figures 1, 2). The static method is widely used in Europe and is often combined with dynamic US method (presented later on by Harcke et al in the United States). The rationale of dynamic method is to examine the position of femoral head during rest and stress testing (Barlow maneuver).

Hip dislocation that is diagnosed in older infants often requires surgical intervention.

Countries (such as Austria, Czech Republic and Germany) with established nationwide hip US screening programs report the lowest rates of open reduction for established...
and or late diagnosed hip dislocation between 0.07 and 0.26. Countries with clinical screening for DDH without sonography (such as New Zealand and Ireland) report open reduction rates of between 0.78 and 1.30 per 1.000 births and represent the baseline for comparison and possible improvement.

The implementation of infant hip US as a screening tool for DDH is not well documented, since there is no statistically solid evidence that US screening reduces the prevalence of late-presenting DDH. In accordance with that, the ESPR DDH task force concludes that at present there is no consensus on neonatal ultrasound technique, screening strategies or indications for treatment, but recommends selective infant hip ultrasound screening in areas with high prevalence of late DDH provided that the US screening is of high quality; if selective screening has no effect on the prevalence of late DDH cases, universal screening should be considered. Selective screening includes newborns with risk factors for DDH: Family history of DDH (at least one first degree relative or two second degree relatives treated for DDH), infants with breech presentation or foot deformities and positive or equivocal clinical findings.

References

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