SUMMARY

Early diagnosis of developmental dysplasia of the hip in newborns is essential if treatment is to be successful. Screeing of newborns is appropriate because developmental dysplasia of the hip has a high prevalance and significant morbidity and is treatable. Screening by clinical examination alone has shortcomings, and the use of sonography for screening has been proposed *(Harcke H.T. 1994)*.

Hip sonography enables an accurate and clinically rlevant evaluation of hip maturation during the first days of human life. Experience has shown that an integration of hip sonography into neonatal screening programms is useful and necessary because clinical and even roentgenographic does not always establish a confirmed diagnosis of dysplasia *(Schuler et al., 1990)*.

Various sonographic techniques widely spread used. It's found by *Haller J.* that the area for ultrasound examination of the pediatric pelvis is best studied in transverse and longitudinal scans with the patient in supine position.

In general, the best compromize between penetration and resolution is provided by a 7mm diameter, 5 MHz transducer with a short internal focus in neonates and small infants *(Haller J.O. et al., 1981)*. Dynamic and static sonography has become the imaging technique of choice in the diagnosis and follow up of developmental dyspalsia of the hip. *(Soboleski et al., 1993)*.

In vienna speising Hospital and Benha University Hospital, 600 infants "one week to 10 months" were examined by Hosny, sonographically. Examination and interpretation of the sonographic pictures were performed according to the principles and guidelines of Graf. Hips classified into 4 major sonographic types:

Normal; delayed ossification; subluxation and dislocation.

Type I: ∝ angle > 60, bone roof contour is good, iliac promontory is angular or slightly rounded and the cartilage roof is covering the head.

Type II: ∝ angle is 59-43, bony roof contour is satisfactory, iliac promontory is rounded and cartilage roof is covering the head.

Type III: ∝ angle is < 43, bony roof contour is poor, iliac promontory is flat and cartilage roof is everted.

Type IV: ∝ angle is < 43, bony roof contour is poor, iliac promontory is flat and cartilage roof is trapped between the femoral head and the acetabular cavity. *(Hosny, 1994).*

Ther's a direct correlation between the sonographic types and treatment and follow up of cases of hip dysplasia and dislocation According to the study of Exner, the policy of treatment recommended is as follows:

1- Observe hips with ∝ angle < 55° and > 50°. Recommend "double diapering" to allow the parents to do something other than waiting; repeat examination after 4-6 weeks.

2- For dysplastic hip with no dislocation ∝ angle ≤49°, β <72°, prescribe abduction brace (modified Frejka's pillow) worn over the clothes; repeat examination after 2-3 weeks. If no improvement occurs, prescribe Pavlik harness.

3- For dysplastic hip with mild dislocation (∝ ≤49°, β> 72°, <90°), prescribe Pavilk harness; repeat examination after 2 weeks.

4- For dislocated hip (β> 90°), prescribe adhesive plaster extension; repeat examination weekly. *(Exner, 1988)*.

Sonographic screening of all newborns has three principal drawbacks:

1- In a number of infants, sonography shows minor abnormalities of both stability and acetabular development that will resolve by a later age without treatment.

2- The observation and treatment of these false - positive cases as well as the process of screening every newborn, consume considerable resources.

3- The final drawback is that the few cases of dysplasia that develop after the neonatal period will be missed *(Harcke, 1993)*.