

**ULTRASOUND SCREENING
OF HIGH-RISK NEWBORN INFANTS
FOR CONGENITAL DYSPLASIA OF THE HIP**

THESIS

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بسم الله الرحمن الرحيم

« رَبِّ أَوْزِعْنِي أَنْ أَشْكُرَ نِعْمَتَكَ الَّتِي أَنْعَمْتَ عَلَيَّ
وَعَلَى وَالِدَيَّ وَأَنْ أَعْمَلَ صَالِحًا تَرْضَاهُ وَأَدْخِلْنِي
بِرَحْمَتِكَ فِي عِبَادِكَ الصَّالِحِينَ »

صدق الله العظيم

سورة النمل ، آية (١٩)



To...
My family.

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LIST OF ABBREVIATIONS

CDH	Congenital dysplasia of the hip
CS	Cesarean section
CT	Computed tomography
MG	Multigravida
NVD	Normal vaginal delivery
PG	Primigravida
U/S	Ultrasound
U/S-ve	Ultrasound negative for CDH
U/S+ve	Ultrasound positive for CDH

LIST OF TABLES

	Page
Table (1): Sex incidence of CDH among studied patients.	66
Table (2): Relation of order of pregnancy to CDH.	68
Table (3): The relation of presentation at delivery to CDH.	70
Table (4): Incidence of CDH among deliveries with and without oligohydramnios.	72
Table (5): Relation between mode of delivery and CDH.	74
Table (6): The incidence of positive family history among neonates with CDH.	75
Table (7): Relation between birth weight and CDH.	77
Table (8): Results of U/S screening for CDH in high risk newborn babies.	78
Table (9): Significance of limitation of hip movement in diagnosis of CDH.	79
Table (10): Significance of asymmetry of shape of pelvis in diagnosis of CDH.	81
Table (11): The incidence of presence of abnormal skin folds among studied neonates.	83
Table (12): The incidence of the presence of perineal gap among neonates with and without CDH.	85
Table (13): Significance of restriction of hip abduction in diagnosis of CDH.	86
Table (14): Significance of Ortolani test in diagnosis of CDH.	88
Table (15): Significance of Barlow test in diagnosis of CDH.	90
Table (16): Significance of Galeazzi test in diagnosis of CDH.	92

LIST OF FIGURES

	Page
Fig. (1):	Restriction of abduction of the flexed thigh. 20
Fig. (2):	Asymmetry of skin folds. 20
Fig. (3-a, b, c):	Barlow's maneuver. 23–24
Fig. (4):	Galeazzi's sign. 26
Fig. (5):	Diagram of radiograph of the pelvis. 28
Fig. (6):	The C-E angle. 30
Fig. (7):	A diagram of a normal sonogram. 46
Fig. (8):	Normal coronal hip scan. 48
Fig. (9):	Coronal view of superolateral dislocation with acetabular dysplasia. 50
Fig. (10):	Pavlik harness. 58
Fig. (11):	Relation between sex and positivity of CDH diagnosed by U/S. 67
Fig. (12):	Relation between PG and positivity of CDH diagnosed by U/S. 69
Fig. (13):	Relation between presentation and positivity of CDH diagnosed by U/S. 71
Fig. (14):	Relation between oligohydramnios and positivity of CDH diagnosed by U/S. 73
Fig. (15):	Relation between family history and positivity of CDH diagnosed by U/S. 76
Fig. (16):	Relation between limitation of movement and positivity of CDH diagnosed by U/S. 80
Fig. (17):	Relation between asymmetry of shape of pelvis and positivity of CDH diagnosed by U/S. 82

		Page
Fig. (18):	Relation between skin fold and positivity of CDH diagnosed by U/S.	84
Fig. (19):	Relation between restriction of hip abduction and positivity of CDH diagnosed by U/S.	87
Fig. (20):	Relation between Ortolani and positivity of CDH diagnosed by U/S.	89
Fig. (21):	Relation between Barlow test and positivity of CDH diagnosed by U/S.	91
Fig. (22):	U/S of normal hip joints.	93
Fig. (23):	U/S of a case with right side CDH.	93
Fig. (24):	U/S of a case with bilateral CDH.	94
Fig. (25):	U/S of a case with bilateral CDH associated with bilateral subluxation.	94
Fig. (26):	U/S of a case with bilateral CDH with bilateral dislocation.	95
Fig. (27):	U/S of a case with right side CDH.	95

CONTENTS

	Page
Introduction and Aim of the Work	1
Review of Literature	3
– Anatomy of the Hip Joint	3
– Congenital Dysplasia of the Hip	10
Aetiological Factors	11
Bone Changes in CDH	15
Diagnosis of CDH in Infancy	18
Clinical	19
Radiological	27
Arthrography	32
Computed Tomography	33
– Ultrasonography of the Hip Joint	36
– Treatment of CDH	57
Subjects and Methods	61
Results	65
Discussion	96
Summary and Conclusions	109
Recommendations	113
References	114
Arabic Summary	

Introduction and Aim of the Work

INTRODUCTION

Congenital dysplasia of the hip results from abnormal development of one or all of the components of the hip joints, the acetabulum, the femoral head and the surrounding capsule and soft tissues (*Ogden, 1988*).

It is well established that early diagnosis and treatment improves the outcome in CDH. If CDH is detected in the first months of life, outpatient treatment with a soft harness is safe, inexpensive and effective (*Tachdjian, 1990*). However, delay in the diagnosis of CDH often necessitates inpatient traction and casting or operative intervention often with a suboptimal outcome (*Harcke and Grissom, 1990*). In addition, up to 25% of adult hip osteoarthritis requiring surgery has been attributed to the late effects of mild CDH (*Tonnis et al., 1990*).

CDH continues to be missed by routine physical screening examinations in the early months when treatment is most effective. It has been estimated that up to 50% of CDH are undetected at paediatric neonatal clinical screening. Thus improved methods of increasing early diagnosis are needed (*Ilfeld et al., 1986*).

Real time ultrasonography (U/S) is valuable in the detection of CDH in the young infant (*Boal and Schwentker, 1985*). Ultrasonography allows visualization of the cartilaginous femoral head and its functional anatomic relationship to the bony and cartilaginous acetabulum (*Harcke et al., 1984*).

Aim of the Work

This work was carried out to study the role of clinical and ultrasound screening for CDH among high risk newborn infants aiming at early diagnosis and treatment of this condition and decreasing the number of missed cases.

Review of Literature

ANATOMY OF THE HIP JOINT

The hip joint is a synovial joint of the ball and socket variety.

The stability of the hip is largely the result of the adaptation of the articulating surfaces of acetabulum and femoral head to each other and its great range of mobility, results from the femur having a neck that is much narrower than the equatorial diameter of the head (*Pansky*, 1984).

In general it can be said that in all joints stability and range of movement are in reverse proportion to each other. The hip joint provides a remarkable example of high degree of both.

The Acetabulum

The three elements of the hip bone, the pubis, the ileum and the ischium meet in the acetabulum at a triradiate synchondrosis (*Mcvey*, 1984).

The acetabular cartilage surface covered with hyaline cartilage is a C-shaped concavity. Its peripheral edge is deepened by a rim of fibrocartilage which encloses the femoral head beyond its equator thus increasing the stability of joint. This rim is named the labrum