Management of Neglected Cases of Developmental Dysplasia of the HIP "DDH"

Essay

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List of Abbreviations

AI	:	Acetabular index
AVN	:	Avascular necrosis
CE angle	:	Center edge angle of Wiberg
CMT	:	Congenital Muscular Torticollis
DDH	:	Developmental dysplasia of hip
EUA	:	Examination under anesthesia
IP	:	Iliopsoas
SPGR	:	Spoiled gradient recalled sequences
TAR	:	Thrombocytopenia Absent Radius

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Introduction

Developmental dysplasia of the infant hip (DDH) encompasses all the variants of disordered hip development in infants, including dislocation, subluxation, and dysplasia, whether they occur prenatally (congenitally) or postnatal[(1)].

Progress in ultrasound imaging gave developmental hip dysplasia a greater prominence in recent years.

In several European countries, all newborn infants routinely undergo ultrasonography, One consequence of routine ultrasonographic screening has been a pronounced increase in treatment of neonates.

In a dislocated or subluxated hip the femoral head is completely or partly displaced from the acetabulum: this disorder can be associated with secondary acetabular dysplasia whether or not the dislocation or subluxation persists. In a stable dysplastic hip, the acetabulum is dysplastic but the femoral head is stable and not displaced. These disorders might share the same antecedents, but further research is needed, especially to find out whether stable acetabular dysplasia in late adolescence is preceded by dysplasia or instability in infancy, or is modifiable by early treatment [(2)]

Definitions of Dislocation, Subluxation and Dysplasia:

Dislocation this is defined as displacement of the articulating bones leading to a separation of joint surfaces. Late dislocation is usually defined as an irreducibly dislocated hip presenting after the age of 4 to 6 months of age[(3)].

Subluxation-this is defined as a partial dislocation in that there is some contact between the joint surfaces, but there is usually a lack of congruity[(3)].

Dysplasia-this is defined as an abnormality of the development of the acetabulum, usually resulting in a shallow and dysmorphic socket, although the hip joint is reduced [(3)].

The pathologic changes in patients with DDH are the basis for understanding DDH as a spectrum in time and severity[(4)].

If the hip remains dislocated, additional changes occur in growth and development of the acetabulum, providing diminished covering of the femoral head[(5)].

Up to a point, these changes are reversible, but the exact upper age at which hip reduction will result in normal acetabular development is uncertain.

DDH is defined as neglected when it is diagnosed at walking age with a limp on the affected side(positive Trendelenburg sign) and hyperlordosis[6].

Late cases of DDH are the cases diagnosed near adolescence with painful limp and low back pain[6].

Neglected cases of developmental dysplasia of hip (DDH) are generally difficult to treat satisfactorily [7].

Aim of the Study

The aim of this study is to discuss the different modalities of recent methods of management of neglected cases of developmental dysplasia of the hip at age group from (1-4) years.

Patho-anatomy

The pathologic changes in the newborn are predominantly related to a shallow acetabulum, laxity of the capsule, and soft-tissue interposition. Older children exhibit more advanced changes in both the soft tissues and the osseous architecture [(8)].

There is a delay in the ossification of the acetabulum, which is most often abnormally shallow, anteverted, and deficient anterolaterally. There is also a delay in ossification of the femoral head and exaggerated femoral anteversion[(8)].

The obstacles to a concentric reduction may be classified as either extra-articular or intra-articular.

Extra-articular obstacles include a tight psoas tendon, which can constrict the anterior capsule so as to create an "hourglass" narrowing of the capsule, which prevents reduction. Tight adductor muscles may also prevent sufficient abduction for stable reduction of the femoral head[(8)].

Intra-articular obstacles that may impede reduction include a constricted joint capsule, the fibrofatty pulvinar, a hypertrophied ligamentum teres, and an infolded labrum [(8)]