CLOSED REDUCTION, ARTHROGRAM AND HIP SPICA AS A MODALITY OF TREATMENT OF DDH

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Materials and Methods

• 22 consecutive children with 34 hips with minimum followup of 1 y.

• Hips with dislocation were included in the study

• USG, X ray
Materials and Methods

- Pavlik harness for 6-9 month with gradual weaning.
- Follow up - 1 year
- Per cutaneous adductor tenotomy was performed under anaesthesia. Arthrogram was done to delineate the head and confirm the adequacy of reduction.
- Hip spica was given for 1.5-3 months depending on the instability noted.
Procedure

1 month

Radiograph
Adductor and gracilis tenotomy
Reduction

Abduction view

Neutral
Hip Spica

Pavlik harness
Hip spica
Pavlik Harness

- Worn for 23 hrs. for 3 months
- Weaning over 6 months
Arthrogram (Hattori et al, JBJS)

No soft tissue interposition

Small folds of soft tissue in lateral part of acetabulum

Type 1

Type 2
Arthrogram

Inverted limbus covers half of acetabular roof

Thick soft interposition covering acetabular roof and floor

Type 3

Type 4
Distance T - between 2 arrows
Results

• Idiopathic- 10 children with 16 hips
• Non Idiopathic-12 children with 18 hips
• Male : Female 1:2.
• Age at surgery : 1-6 months
Idiopathic

- Positive Ortolani and Barlow in 8 out of 16 hips
- All hips in Type 1 or 2 and distance T< 3.5mm
- Hips spica was given for 1.5 months
- Pavlik Harness for 6 months
Idiopathic case 1

10 day old

1.5 yrs
Idiopathic

1.5 yrs

clinical
Non idiopathic

• Associated findings were CVT, CDK, CTEV and hand deformities which were treated appropriately.

• Mean duration of plaster was 2.2 months

• 4 of 18 hips were normal at last followup

• 2 out of 18 showed residual acetabular dysplasia

• 4 hips out of 18 dislocated again between 0-3 months of removal of plaster

• 4 hips in 2 children in severe arthrogryposis- could not be reduced.
Results

• CP was diagnosed in 2 children in 4 hips: Both showed well reduced hips but a delay in appearance of ossific nucleus
Arthrographic findings

- Type 1: 4
- Type 2: 2
- Type 3: 4
- Type 4: 4
- Not classified: 4 hips (unreduced)
Distance-T

- **Group A**: 8 hips <3.5mm - stable at last follow up

- **Group B**: 10 hips: >3.5mm - unstable
Non diopathic

Arthrogram

1.8 yr follow up
DDH with CVT

At birth

After plaster removal

2 yr.
Acetabular dysplasia

1 month

1.5 yrs.
AGMC

At birth

At birth
AGMC

At birth

radiograph
Cerebral palsy

At 1 month  

1 yr.  

1.8 yrs
Role of CT scan

- 3 children
- Good tool where diagnosis was still in doubt especially in infants
- Certain parameters like the acetabular index, axial acetabular index, anterior and posterior acetabular angles, acetabular anteversion, and axial reduction index can be used for followup
Take home message

• Arthrography is a easy and effective tool in management of DDH

• Scoring methods can be used to prognosticate in some hips

• Idiopathic hip did well

• Need for secondary procedures must be explained to parents in non idiopathic group
Literature review


