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Research Article

**FOLLOW UP STUDY FOR THREE YEARS OF CONGENITAL  
HIP DISLOCATION BY ONE STAGE SURGERY IN 3-5 YEARS  
OF CHILDREN**<sup>1</sup>Dr. Muhammad Zia Ali, <sup>2</sup>Dr. Asad Munir, <sup>3</sup>Dr. Muhammad Junaid Munir<sup>1</sup>Allied Hospital, Faisalabad<sup>2</sup>THQ Hospital Lalian District Chiniot<sup>3</sup>DHQ Jhang**Abstract:**

**Objective:** To evaluate the results of a combined single-stage procedure for congenital hip dislocation in a 3 to 5 year group.

**Study Design:** A Descriptive study

**Place and Duration:** The Study was performed in the Orthopedic Department Unit I of Bahawal Victoria Hospital, Bahawalpur for the period of three years from January 2014 to January 2017.

**Materials and Method:** Twenty-five patients with 30 hips operated by congenital hip dislocation. The procedure was arthrotomy, shortening of femoral bone, derotational varus osteotomy and capsulorrhaphy. Pelvic osteotomy was performed when needed. Preoperative and postoperative clinical and radiological evaluation was performed according to modified criteria of McKay and Severin. Patients were followed for three years.

**Findings:** There were 17 girls and eight boys in this study. The average age is 3, at least 3 and at most 5 years. There were bilateral dislocations in five cases. The final follow-up was classified as hip III (31.0%), 1 hip (4%), 11 hip (12.0%) hip and 3 hip (12.0%). In 3 patients (12%), the case was classified as I (4%) I and III according to the time of the femur head and MacEwen Kalamchi avascular necrosis (AVN). Functional assessment was made according to modified McKay criteria. According to this approach, the final follow-up was 15 (60%) good and 6 (24%) excellent and 4 (16.0%) fair.

**Conclusion:** A phase correction of hip congenital outflow in an old child is a reliable and effective treatment with good results in short and medium term.

**Key words:** Dislocation, Hip Dysplasia, Development.

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**INTRODUCTION:**

Patients with hip dysplasia (DDC) in Pakistan do not have neonatal screenings in the majority. For this reason, early diagnosis is not only eye-catching, but it is also common to see a large child with untreated congenital hip protrusion. The reported prevalence of hip and pelvic mass found in children in European and American populations is unreliable. Clinical examination is unreliable 8-10, and pandemics often indicate when the child is lame 0.7 to 1.6 / 10002. Many studies have begun to vary. Different age groups have different types of treatment, it is an unresolved problem. Late diagnosis leads to significant problems in the treatment of DDH; dislocated dislocated displaced acetabulum for such types 7. Made of soft tissues High femur head, a combination of procedures including open reduction of femoral and femoral varus osteotomy without concurrent or pelvic osteotomy. Advantages of the combined procedure are that it avoids the need for a long pre-operative withdrawal, while femoral abstraction avoids pelvic osteotomy can cause instability avascular necrosis 9 displaced acetabulum predisposition prevents femur head overpressure Hip hip reduction 18-20 is achieved. Another advantage of a single-step procedure combined with hip congenital residence is a reduced resurgence or a short hospital stay that is immobile for a long time and very little need for stiffness. We evaluated the radiographic and functional results of the combined stage procedure of hip congenital outgrowth in twenty-five patients (thirty hips) between the ages of two and five years.

**MATERIALS AND METHODS:**

This study was conducted in twenty-five patients (thirty hips) between two outpatients with congenital hip outbreaks in Orthopedic Department Unit I of Bahawal Victoria Hospital, Bahawalpur for the period of three years from January 2014 to January 2017. A single step-by-step procedure was used.

All cases had hip, progressive femoral head proximal migration, acetabular index, pelvic radiograph showing femur graph, anteroposterior and radiographs with hips on the hips to determine Wiberg central angle. Shenton and femur neck angle

shafts. All parents were informed about the conditions of their children's hips, which necessitated the urgency of the surgical procedure. Written patient consent was obtained from all parents. 750 milligrams of preoperative induction of cephaleximus were used and locally produced implants were used.

**Surgical procedure:** A single incision in the anterior portion of the femur extends from about 3 centimeters and extends about 2 centimeters (cm) toward the greater trochanter and then extends to about 4 centimeters below the ASIS head. This was followed by the release of soft tissues such as sartorius, rectum and illeopsoas. The capsule is carefully removed from the Adductor muscle, and the hip is removed from the pulvinar and ligamentum teres, dislocations, and a transverse acetabulum ligament is opened as a T that cuts multiple transverses. The femur is measured by radiographs and proximal to the exposed proximal limb and shortens the length of the small trochanter prior to surgery to correct the extreme anteversion of the femur to reduce the angle of the osteotomized bone neck axle with 4 holes 3.5 mm (mm) in the derotation dynamic compression plate. Also if the SALTER is not stable if pelvic osteotomy can be added, the hip will be re-evaluated for stability. Pelvic osteotomy bone graft was taken from the ipsilateral side.

Ilium and osteotomy. The graft is stabilized with one or two K-wires. the hip is then confirmed with the image intensifier and then stabilized with a K-cut intraarticular 2 mm. The capsule, at the beginning, has a careful T-shaped layer, which affects repair on the other layer. The wound is closed over the suction drainage and immobilized on a spine and a half-hips for six weeks. Preoperative traction was not used in any of our patients. Gypsum and K teli were removed as a daily situation after six weeks. X-rays were taken at this stage to confirm the position of the hip and the patients were gradually mobilized on the following days. The plaque was removed after the bone graft was obtained. All patients were 3 years and 5 years postoperatively, radiographically assessed and functional years according to modified McKay (Table 1) and modified Germain classification (Table 2).

**Table 1:** Modified McKay criteria <sup>11</sup>

<b>Excellent</b>	Stable, painless hip, no limp, negative Trendelenberg sign, no limb length discrepancies and a full range of movement
<b>Good</b>	Stable painless hip, slight limp negative Trendelenberg no limb length discrepancies and a slight decrease in range of movement
<b>Fair</b>	Stable limp positive Trendelenberg sign, limitation of movement and some pain
<b>Poor</b>	Unstable painful hip positive Trendelenberg sign

**Table 2:** Modified Severin Classification <sup>12</sup>.

<b>Excellent</b>	1A CE angle > 19 degree
<b>Good</b>	1B CE angle 15-19 degree
	II Moderate deformity of femoral head otherwise same as grade I
<b>Fair</b>	III Dysplastic hip no Subluxation CE angle < 19 degree
<b>Poor</b>	IV Subluxation
	V Femoral head in false acetabulum
	VI Redislocation

Clinical evaluation included inconsistency in laxity in each hip pain, range of motion, edge length, and Trendelenberg sign. Radiographic changes of avascular necrosis were classified according to Kalamchi and MacEwen (Table 3).

**Table 3:** Kalamchi and MacEwen's classification of avascular necrosis of the hip <sup>13</sup>.

<b>Group I</b>	Failure of appearance of the ossific nucleus during the 1 <sup>st</sup> year after reduction
<b>Group II</b>	Damage of the lateral aspect of the growth plate. Lateral metaphysical notch or defect
<b>Group III</b>	Damage of the physis with a large central defect
<b>Group IV</b>	Damage to the entire femoral head and physis

## RESULTS:

There were 17 girls and 8 boys whose heights were congenital. The male to female ratio is 1: 2 (Table 4). The average age at the time of surgery is three years, at least 3 and at most 5 years. Five of the children had bilateral dislocations. The left side was located in eighteen cases (Table 5). Patients were followed for three years. Parental suitability for follow-up was not good. The remaining 25 hips were followed up with 5 cases. It was not appropriate to contact the patients for follow-up because most of these patients changed their contact number or they did not want to come because they told us that their son was good on the phone.

**Table 4:** Gender of the Patients

Gender	Frequency	Percent
<b>Female</b>	17	68.0
<b>Male</b>	8	32.0
<b>Total</b>	25	100.0

**Table 5:** Side Involved

Side	Frequency	Percent
<b>Bilateral</b>	5	20.0
<b>Left</b>	12	48.0
<b>Right</b>	8	32.0
<b>Total</b>	25	100.0

Radiological evaluation According to the modified Severin classification, in the first follow-up, 9 hips were 1A, 6B; ten degrees II and five degrees III. In the second follow-up, 8 (32.0%) hip 1U, 4 (16.0%) hip 1B, 9 (36.0%) hip II and 4 (16.0%) were grade III according to the modified Severin classification. In the third follow-up, 7 (28.0%) were hip 1A, 4 (16.0%) were hip 1B, 11 (44.0%) were hip grade II and 3 (12.0%) were hip grade III. (Table 6).

**Table 6:** Radiological Results (Severin Grading).

Grade	1 <sup>st</sup> follow up	2 <sup>nd</sup> follow up	3 <sup>rd</sup> follow up
I a	9 (30%)	8(32.0%)	7(28.0%)
I b	6 (20%)	4(16.0%)	4(16.0%)
II	10(33.33%)	9(36.0%)	11(44.0%)
III	5 (16.67%)	4(16.0%)	3(12.0%)
<b>Total</b>	<b>30(100%)</b>	<b>25(100%)</b>	<b>25(100%)</b>

In the avascular necrosis of the femur head classified by Kalamchi and MacEwen, only two severe hip ends of grade II were found. In the second follow-up, the femur, classified by Kalamchi and MacEwen, was classified as having avascular necrosis II and 2 (8%) classified as 2 (8%). In the third follow-up, 1 (4%) cases and III (12%) cases were allocated (Table 7). At the last follow-up, the average acetabular index showed an oscillation of 15 degrees (normally 22 degrees, degree of 22 degrees and average CE (Wiberg middle edge angle) 25 degrees, 18 degrees, 30 degrees.

**Table 7:** Kalamchi Grading For AVN

Group	1 <sup>st</sup> follow up	2 <sup>nd</sup> follow up	3 <sup>rd</sup> follow up
I	0	2(8%)	1(4%)
II	2(8%)	2(8%)	0
III	0	0	3(12%)

Functional outcomes In the second and third follow-up, we lost five phenomena, and most of the rest of the children did not have any active concern and no major concern. While all the pelvis was stable and painless, five children presented some limitations of lameness and hip movement with positive Trendelenberg at first follow-up. Three weeks later, redistribution was performed in one patient, during which time revision surgery was performed with pelvic osteotomy and an acetabular head fixed with 1.5 mm wire removed four weeks later. Two patients had external rotation deformities due to excessive derotation of the femur neck. Functional assessment at the first follow-up was made according to modified McKay criteria. In the first follow-up of the thighs, 18 (60%) were excellent, 7 (23%) were good and 5 (17%) were equally classified. In the second follow-up of 25 hips, 16 (64.0%) were classified as good 5 (20.0%) and 4 (16.0%) were classified as clean. In the final follow-up, 15 (60%) were excellent, 6 (24%) were good and 4 (16.0%) were evaluated. (Table 8)

**Table 8:** Clinical Results According To Modified Mc Kay Criterion.

	1 <sup>st</sup> follow up	2 <sup>nd</sup> follow up	3 <sup>rd</sup> follow up
<b>Excellent</b>	18(60%)	16(64.0)	15(60%)
<b>Good</b>	7 (23%)	5(20.0%)	6(24%)
<b>Fair</b>	5 (17%)	4(16.0%)	4(16%)

**DISCUSSION:**

In this study, there were twenty-five children thirty-hips, which led to the congenital dislocation of untreated hips. They underwent a combined single-stage operation involving open reduction, femoral shortening, and varus derotational osteotomy. Most of the hips had excellent functional results according to modified McKay criteria. There are no hip complications such as gait abnormalities, restriction of hip movements, joint pain and arthritis at a young age. The main purpose of the treatment of neglected congenital dislocation of the hip in children is to achieve a satisfactory development in the stabilized and concentric joints and hips. 14. The exact age at which open reduction is no longer possible in children is unknown. Although surgical intervention indications seem to be extended every year. Femoral shortening has been shown to facilitate reduction in children older than 2 years<sup>15</sup>. The use of preoperative traction to reduce the congenital dislocation of the hips and possibly reduce the rate of avascular necrosis at the hip is controversial. 14. Long-term functional and radiographic results of treatment of the stage of treatment. Congenital hip dislocation in older children has not been evaluated by many investigators. In a study of 18 hips with at least four years of age by Vallamshelta *et al.*, Excellent results were reported at 12 hips and were good at six hips, both radiographically and functionally. They only reported avascular necrosis in a single hump. Klisic and Jankovic examined 60 hips and 41 (68%) had good or excellent radiographic results and 63% had good or excellent overall results. 17. Caracas and colleagues studied forty-seven children (fifty-five hips). Four-year-old people with a combined operation in the primary stage. Excellent or good clinical and radiographic results were reported in 37 (67%) hips. Only four hips found avascular necrosis. It is clear from this study that the age of the patient at the time of treatment affects the radiographic outcome. Residual dysplasia is more common in children older than four years of age during initial treatment.

**CONCLUSION:**

The age of the patient at the time of treatment affected the radiographic outcome. The appropriate reduction in the first operation provides the best chance for a functional or radiographic appearance of a good or excellent long-term hip. There are many hip deformities in this age, and handling all of them at the same time increases functional and radiological performance.

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