

Frequency of developmental dysplasia of hip in children having congenital talipes equinovarus

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Objective: To determine the frequency of developmental dysplasia of the hip (DDH) in children with congenital talipes equino-varus (CTEV).

Methodology: This descriptive cross sectional study was carried out on 144 patients in the Department of Orthopedics and Trauma, Hayatabad Medical Complex, Peshawar, Pakistan from June 2014 to May 2015. Children with CTEV of either gender of age less than 18 months were included. Patients of CTEV were evaluated clinically and then screened for DDH by radiographic examination. Data were analyzed using SPSS version 17.

Results: A total of 144 patients with CTEV were

divided into two groups according to age. Gender wise distribution showed 80 (55.6%) were male and 64 (44.6 %) female. Six (4.16%) patients had DDH; 4 (66.66%) were females and 2 (33.44%) male. Of 144 CTEV patients, right side was involved in 89 (61.8%) and left side in 55(38.2%) cases. DDH occurred in 4 (66.66%) patients on right side and 2 (33.44%) on left side.

Conclusion: If a patient was found to have an idiopathic CTEV, it is advisable to have a screening for DDH as well. (Rawal Med J 201;41:462-464)

Key words: Congenital talipes equinovarus, developmental dysplasia of hip, club foot, congenital dislocation of hip.

INTRODUCTION

Congenital Talipes Equinovarus (CTEV) is the most common congenital and complex type of deformity and out of 1000 live births, 1 to 2 newborns suffer from it. It can be defined as a foot deformity of the newborn, which includes forefoot adductus, midfoot cavus, hind foot varus and ankle equinus, when these deformities are not fully passively correctable.¹ Controversy persists as to a potential association between CTEV and developmental dysplasia of the hip (DDH).^{1,2} Although many experienced pediatric orthopedic surgeons believe such a link exist in more recent studies.³⁻⁵

DDH generally includes subluxation (partial dislocation) of the femoral head, acetabular dysplasia and complete dislocation of femoral head from the true acetabulum and it includes infants normal at birth but in whom the hip dysplasia or dislocation subsequently develop.⁶⁻⁸ Thus, the term DDH indicates a dynamic disorder potentially capable of getting better or worse as the child grows depending on the multidisciplinary care provided.⁹ Developmental dysplasia of the hip affects 1-3% of

newborns and is responsible for 29% of primary hip replacements in people up to the age of 60 years.⁷ The left hip is dislocated more often than the right and often bilateral involvement is more common.⁸ It is more common in cultures that use swaddling of babies,¹⁰ a maneuver that forces the hips into extension and abduction.³ There is a 4:1 female predominance. Highest risk of DDH exists with extended breech position and in children with CTEV.^{10,11} The aim of present study was to assess the frequency of DDH in children presenting with CTEV.

METHODOLOGY

This descriptive cross sectional study was carried out on 144 patients using WHO formula for sample size in the Department of Orthopedics and Trauma, Hayatabad Medical Complex, Peshawar, Pakistan from June 2014 To May 2015. Children with CTEV of either gender of age less than 18 months were included while patients with postural deformities and neuromuscular disorder were excluded from the study. Patients of CTEV were evaluated clinically

and then screened for DDH by radiographic examination. All the data was enter into SPSS version 17 and analyzed for frequencies.

RESULTS

Out of 144 patients with CTEV, 80 (55.6%) were male and 64 (44.6 %) female; with male to female ratio of 1.25:1. Age wise distribution showed group A from 5-11 months and group B from 12-18 months. Group A: 115 (79.9%) and Group B: 29 (20.9%) (Table 1).

Of 144 CTEV patients right side was involved 89 (61.8%) and left side in 55 (38.2%) cases. DDH occurred in 4 (66.66%) patients on right side and 2 (33.44%) on left side. (Table 2)

Average age of 5-11 months among males were 70 (87.5%) and 10 (12.5%) were between 12-18 months of age out of 80 males. Among a total of 64 females 45 (70.3 %) were <11 months and 19(29.6%) were in age range 12-18 months of age. Frequency of DDH was 6 (4.16 %) out of 144 CTEV patients (Table 3).

Table 1. Age wise distribution.

Age	Number	Percent
5 months to 11 months	115	79.9
12 months to 18 months	29	20.1
Total	144	100.0

Table 2. Side involvement.

Side	Number	Percent
Right	89	61.8
Left	55	38.2
Total	144	100.0

Table 3. Frequency of developmental hip dysplasia.

	Number	Percent
NO	128	95.84
YES	6	4.16
Total	144	100.0

Gender wise 4 (66.66%) were females and 2 (33.44 %) males had DDH. All 4 female children (100%) were less than 11 months of age and none were between 12-18 months. Among 2 males, all (100 %)

were less than 11 months of age and none were in the age group 12-18 months.

DISCUSSION

DDH may be defined simply as abnormal growth of the hip. Abnormal development of the hip includes the osseous structures, such as the acetabulum and the proximal femur, as well as the labrum, capsule, and other soft tissues. This condition may occur at any time, from conception to skeletal maturity. Most of the physicians prefer to use the term hip dysplasia, considering it both simpler and more accurate. Internationally, this disorder is still referred to as congenital dislocation of the hip.^{3,7}

In our study, the frequency of DDH in patients having CTEV was 6 (4.16 %), which is comparable with studies by Carney and Vanek.¹² They did roentgenogram of 51 children with CTEV and found DDH in 8 out of 51 (16%). Wynne Davis¹³ identified just one baby in 165 had both idiopathic CTEV and DDH. Westberry et al¹⁴ observed one (0.7%) patient with hip dysplasia out of 127 screened with radiographs. Paton et al⁵ found 1(7%) in 140 babies referred to the screening program with 'foot abnormalities', later figures showed 427 babies referred with 'foot deformity' of whom 13 had DDH. Weinstein¹⁵ quotes 72 cases diagnosed clinically confirmed on X ray out of 51359 live births or 1 in 713 (0.14%).

CONCLUSION

In a baby born with one congenital anomaly, most of time s/he may have other anomalies as well. Our study supports the association between CTEV and DDH. When a baby found to have idiopathic CTEV s/he should be screened for DDH as well.

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Conflict of Interest: None declared
 Rec. Date: Jun 23, 2016 Revision Rec. Date: Jun 30, 2016 Accept Date: Jul 5, 2016

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