Socioeconomic Risk Factors for Late Presentation of Developmental Hip Dislocation

Brian Weatherford, MD, Jill E. Larson, MD, Brittany Patrick, MPH, Joseph A. Janicki, MD
Northwestern University, Children's Memorial Hospital, Chicago, IL

Purpose: The detection of hip dislocation or instability in infancy relies on careful physical examination and recognition of risk factors by primary care physicians. In the child who is identified after 6 months of age, it is typical that operative management, in the form of closed or open reduction, is necessary to stabilize the hip and improve long term outcomes. We hypothesize that patients may have socioeconomic factors that place them at increased risk for presenting after 6 months of age with a developmental hip dislocation.

Methods: A retrospective review of medical records at a tertiary care hospital between 2004 and 2010 was completed. Patients were included if they had documented hip instability by radiographic criteria or physical exam which resulted in treatment or a fixed dislocation. Patients were defined as “late” if they presented for initial treatment after 6 months of age. Hip instability or dislocation was found in 201 patients presenting at or before 6 months of age (EARLY) and in 51 patients presenting after 6 months of age (LATE). Risk factors evaluated included sex, breech positioning, ethnicity, language, insurance status, birth order, comorbid conditions, income by zip code, and family composition.

Results: The mean age at presentation in the EARLY group was 1.2 months (range 0-6) and the in LATE group was 17.7 months (range 6.1-89.2). Hispanic ethnicity (EARLY=28%, LATE=55%) (p=0.0015) (odds ratio 3.4, 95% CI 1.7-6.9), Spanish as a primary language (EARLY=15%, LATE=37%) (p=0.0003) (odds ratio 3.4, 95% CI 1.7-6.7), and Medicaid insurance (EARLY=31%, LATE=49%) (p=0.018) (odds ratio 2.1, 95% CI 1.1-3.9) were found to be statistically significant factors for presentation after 6 months of age. The number of breech deliveries in the EARLY group (29%) was statistically different when compared with LATE (12%) group (p=0.0353). Factors that were not significant included sex (p=0.35), birth order (p=0.25), medical comorbidities (p=0.90), family composition (p=0.39), or income by zip code (p=0.17).

Conclusion: Hispanic ethnicity, insurance status and language are factors that significantly increase the risk of late presentation for patients with a developmental hip dislocation. Children who were not delivered breech also presented more often after 6 months of age.

Significance: Socioeconomic factors play a significant role in the identification of patients with a developmental hip dislocation. These findings have implications for the future of developmental hip dysplasia screening, referral protocols and family education in these at risk populations. By educating primary care physicians of these risk factors increased attention can be given to patients to possibly prompt earlier identification and decrease the morbidity associated with delayed presentation of developmental hip dislocation.