



# POSNA

## The Core Curriculum

### **Developmental dysplasia of the hip (walking age)**

#### **Objectives**

1. Describe signs of developmental dysplasia in the ambulatory child
2. Describe treatment approaches to the child of walking age with developmental dysplasia of the hip
3. Describe the natural history of untreated developmental dysplasia of the hip
4. Discuss complications of treatment of older children with developmental dislocation of the hip

#### **Discussion point**

1. Would it be better judgment to attempt reduction of a 6 year old with an untreated unilateral dislocation or leave it alone? With a bilateral dislocation?

#### **Discussion**

It was until the second half of the twentieth century that routine diagnosis of DDH was made before walking age in North America, although late diagnosis still is common in developing countries. All the anatomic changes in the pelvis and proximal femur become more severe as the child starts ambulating. At this point, it is much more common to perform bony procedures on one or both sides of the joint to achieve and maintain reduction. Femoral shortening has matured as a method of "decompressing" the hip to reduce the incidence of avascular necrosis. Traction also has advocates, and the clinician treating this condition must make his own assessment of the reported results to devise his/her own treatment plan. Surgery is also frequently performed at this age on children who were treated earlier but have residual dysplasia. The long-term studies of Schwend and Pratt on untreated Najavos with acetabular dysplasia provide a yardstick by which one can measure the effects of intervention. The fate of adults with untreated complete dislocations has been addressed by Crawford and Wedge.

Most authors presently reporting on the initial treatment of DDH in the walking age child report positive results that most likely warrant intervention for the older child with untreated DDH. There are also a number of procedures available for refinement of results in the older child with residual dysplasia for whom treatment is felt indicated. The innominate osteotomy of Salter, which redirects the acetabulum anterolaterally has its advocates even into young adult years. The pericapsular osteotomy described by Pemberton is less widely used, but can achieve change of acetabular shape. Double and triple pelvic osteotomies can realign the acetabulum of the older patient, and complex pericapsular osteotomies to redirect the acetabulum are becoming more refined. The judgment and skill required to make good clinical decisions and skillfully execute treatment in this group of patients is considerable.

## References

1. Albinana J, Morcuende JA, Weinstein SL. The teardrop in congenital dislocation of the hip diagnosed late. A quantitative study. *Journal of Bone & Joint Surgery - American Volume* 1996;78(7):1048-55.
2. Borges JL, Kumar SJ, Guille JT. Congenital dislocation of the hip in boys. *Journal of Bone & Joint Surgery - American Volume* 1995;77(7):975-84.
3. Crawford AH, Mehlman CT, Slovek RW. The fate of untreated developmental dislocation of the hip: long-term follow-up of eleven patients. *Journal of Pediatric Orthopedics* 1999;19(5):641-4.
4. Danielsson L. Late-diagnosed DDH: a prospective 11-year follow-up of 71 consecutive patients (75 hips). *Acta Orthopaedica Scandinavica* 2000;71(3):232-42.
5. Daoud A, Saighi-Bououina A. Congenital dislocation of the hip in the older child. The effectiveness of overhead traction. *Journal of Bone & Joint Surgery - American Volume* 1996;78(1):30-40.
6. de Kleuver M, Kooijman MA, Pavlov PW, Veth RP. Triple osteotomy of the pelvis for acetabular dysplasia: results at 8 to 15 years. *Journal of Bone & Joint Surgery - British Volume* 1997;79(2):225-9.
7. Fixsen JA, Li PL. The treatment of subluxation of the hip in children over the age of four years [see comments]. *Journal of Bone & Joint Surgery - British Volume* 1998;80(5):757-61.
8. Huang SC, Wang JH. A comparative study of nonoperative versus operative treatment of developmental dysplasia of the hip in patients of walking age. *Journal of Pediatric Orthopedics* 1997;17(2):181-8.
9. Kerry RM, Simonds GW. Long-term results of late non-operative reduction of developmental dysplasia of the hip [see comments]. *Journal of Bone & Joint Surgery - British Volume* 1998;80(1):78-82.
10. Olney B, Latz K, Asher M. Treatment of hip dysplasia in older children with a combined one-stage procedure. *Clinical Orthopaedics & Related Research* 1998(347):215-23.
11. Ryan MG, Johnson LO, Quanbeck DS, Minkowitz B. One-stage treatment of congenital dislocation of the hip in children three to ten years old. Functional and radiographic results. *Journal of Bone & Joint Surgery - American Volume* 1998;80(3):336-44.
12. Schoenecker PL, Anderson DJ, Capelli AM. The acetabular response to proximal femoral varus rotational osteotomy. Results after failure of post-reduction abduction splinting in patients who had congenital dislocation of the hip. *Journal of Bone & Joint Surgery - American Volume* 1995;77(7):990-7.
13. Schwend RM, Pratt WB, Fultz J. Untreated acetabular dysplasia of the hip in the Navajo. A 34 year case series followup. *Clinical Orthopaedics & Related Research* 1999(364):108-16.
14. Vedantam R, Capelli AM, Schoenecker PL. Pemberton osteotomy for the treatment of developmental dysplasia of the hip in older children. *Journal of Pediatric Orthopedics* 1998;18(2):254-8.
15. Wedge JH, Wasylenko MJ. The natural history of congenital disease of the hip. *Journal of Bone & Joint Surgery - British Volume* 1979;61-B(3):334-8.