



Perfusion MRI as a Predictor of Development of Avascular Necrosis after Closed Reduction of Dislocated Hips

We performed a retrospective analysis to look at predictive value of contrast enhanced MRI after closed reduction for avascular necrosis in developmental dysplasia of the hip.

Infants with idiopathic hip dislocations who have failed brace treatment then underwent closed reduction +/- adductor tenotomy and spica cast application under general anesthesia. MRI of the hips with intravenous gadolinium contrast was obtained immediately after spica cast application. Patients were followed with serial radiographs for a minimum of 1 year after closed reduction. The presence of avascular necrosis was determined using x-rays. MRI was graded as normal, asymmetric enhancement, focal decreased enhancement, or global decreased enhancement.

We have found that hips with global decrease in perfusion on MRI are 10 times more likely ($p < 0.05$) to develop AVN. Furthermore, MRI is a predictor of AVN independent of age and abduction angles. We are currently, working on new MRI techniques that may improve the predictive value of imaging after closed reduction for the development of AVN.

Kim Y-J, Griffey M, Jaramillo D, Connolly S, Millis MB, and Kasser J: Post-Closed Reduction MRI as a Predictor for Avascular Necrosis in Hip Dysplasia. POSNA Meeting, St. Louis, MO, 2004.