Long-term Outcomes of Open Reduction With and Without Capsulorrhaphy in Developmental Dysplasia of the Hip

Abstract:

Background: Developmental dysplasia of the hip (DDH) is a common pediatric orthopedic condition that may lead to early osteoarthritis and disability if not adequately treated. The role of capsulorrhaphy during open reduction remains controversial.

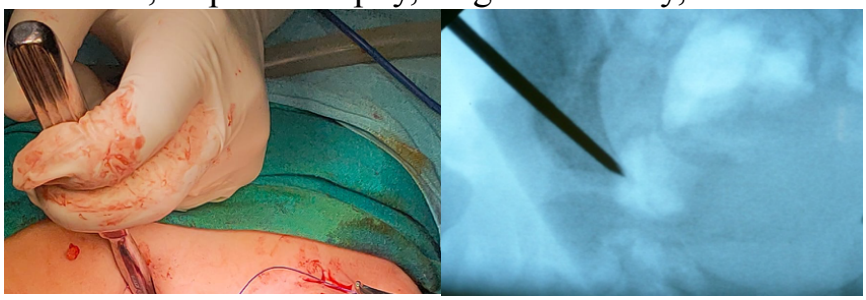
Objective: To compare the long-term clinical and radiological outcomes of open reduction with versus without capsulorrhaphy in DDH.

Methods: This retrospective comparative study included 74 hips in children aged 1–6 years treated between 2019 and 2022. All cases underwent open reduction and Dega osteotomy, with additional femoral procedures when indicated. Patients were divided into two groups: capsulorrhaphy (n=37) and non-capsulorrhaphy (n=37). Clinical outcomes were assessed using modified McKay criteria, while radiological evaluation was performed using Severin classification, acetabular index, and Shenton line. Mean follow-up was approximately 33 months.

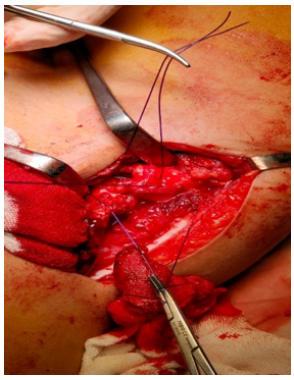
Results: The non-capsulorrhaphy group demonstrated significantly better outcomes, with higher rates of excellent McKay grades (94.6% vs 54.1%, $p<0.001$) and Severin class I results (89.2% vs 59.5%, $p=0.015$). Capsulorrhaphy was associated with increased pain (18.9% vs 0%, $p=0.005$), reduced range of motion ($p=0.001$), higher incidence of limp and deformity ($p\leq0.005$), and more frequent disruption of Shenton line ($p=0.021$). Although acetabular index improvement was similar between groups, complications including avascular necrosis and redislocation were more frequent in the capsulorrhaphy group.

Conclusion: Capsulorrhaphy does not appear to improve stability or radiological outcomes in DDH when adequate soft tissue release and appropriate bony procedures are performed. Avoiding capsulorrhaphy may result in better functional outcomes and fewer complications.

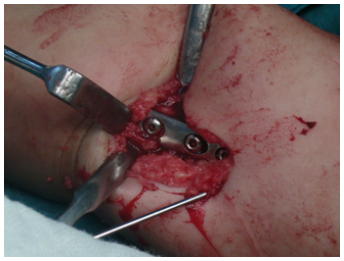
Keywords: Developmental dysplasia of the hip, Open reduction, Capsulorrhaphy, Dega osteotomy, Pediatric hip



osteotome insertion under fluoroscopy



Capsulorrhaphy technique



Femoral osteotomy.