

Salter Pelvic Osteotomy for the Treatment of Developmental Dysplasia of the Hip: Assessment of Postoperative Results and Risk Factors

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Abstract : Background: If non-surgical treatment of developmental dysplasia of the hip (DDH) fails or if DDH is late-detected, surgery is necessary. Salter pelvic osteotomy (SPO) is an effective surgical option for such cases. The objectives of this study were to assess the results after SPO, evaluate risk factors, and reveal those radiological parameters that may correlate with the results. Mid- and long-term postoperative results after SPO in 17 patients (22 hip joints) were analyzed. Risk factors included those that do not depend on the surgeon (patient's age, value of the acetabular index (AI) preoperatively, DDH Tonnis grade) and those that depend on the surgeon (amount of AI correction). To radiological parameters which may correlate with the amount of AI correction, we referred distance "d" and the lateral rotation angle. Results: SPO allows performing AI correction in ranges $24.1 \pm 6.5^\circ$. Excellent and good clinical results were obtained in 95.5% of patients; excellent and good radiological results in 86.4% of patients. Risk factors that do not depend on the surgeon were older patient's age and higher preoperative AI values ($p < 0.05$). The risk factor that depends on the surgeon was the amount of AI correction ($p < 0.05$). The distance "d" was recognized as a radiological parameter that may indicate sufficient AI correction ($p < 0.05$). Conclusion: In older patients with a higher preoperative AI value, the results will be predictably worse. The surgeon may influence the result with a greater amount of AI correction (which may also be indicated radiologically by the distance "d" values).

Keywords : developmental dysplasia of the hip, results, risk factor, pelvic osteotomy, salter osteotomy

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