

Abstract

Morbus Perthes (LCP) is an idiopathic defect in the blood flow of the proximal femoral epiphysis, where morphological and functional pathologies of the hip joint occur. Unfavorable prognostic factors include aspheric and incongruent hip, often manifested by the appearance of hinge abduction. The head is no longer remodeling after "golden" period of remodelling. Anteromedial Wedge Reduction Osteotomy (AWRO) is a new surgical method to improve the shape and reduce the femoral head and thus extend the life of a significantly altered hip joint.

We evaluated 10 patients after the AWRO and established 3 hypotheses, in the clinical part of the study. 1st hypothesis "AWRO leads to the reshape of the head" was confirmed following the Stulberg's classification. 2nd hypothesis "AWRO leads to a reduction in the mediolateral diameter of the head", was confirmed by measuring the capitodiaphyseal index, which was reduced in all femoral heads after AWRO. The 3rd hypothesis "Harris Hip Score improved in medium-term follow up after AWRO." was confirmed. We found increasing of the score in all patients.

In the experimental part, we studied the topography of r. profundus a. circumflexa femoris medialis (ACFM) and r. piriformis a. glutea inferior (AGI) and its relationship to AWRO procedure. We have established 3 hypotheses. The first hypothesis "The distance of r. profundus ACFM from a lesser trochanter will tell about the risk of osteotomy of the medial part of the femoral neck." was confirmed. The risk of injury to r. profundus ACFM increases with the increasing distance of osteotomy from the lesser trochanter. The second hypothesis "There is a relationship between r. piriformis AGI and m. piriformis." was confirmed. R. piriformis AGI runs from fossa infrapiriforme along the lower edge of m. piriformis and is located at a minimum distance of 17mm from the insertion to greater trochanter. The third hypothesis "The medial retinaculum of Weitbrecht's is prolonging after AWRO." was also confirmed in all cases.

We have concluded that AWRO is the effective and safe method according to the clinical and experimental studies. It belongs to hip salvage procedures and thus prolongs the life of the hip joint.