

Abstract

The aim of the study was to determine whether the quality of postural stabilization is impaired in patients referred for total hip replacement (THR) due to advanced coxarthrosis compared to the control group of age matching healthy subjects. Postural stabilization was assessed using four tests according to the Dynamic Neuromuscular Stabilization by a trained DNS therapist. Twenty-six patients referred for THR were included in the study. The control group consisted of 25 subjects without subjective and clinical signs of coxarthrosis.

In the experimental group with advanced coxarthrosis, the quality of postural stabilization assessed by DNS functional tests (Respiratory stereotype test, Intra-abdominal pressure regulation test, Diaphragm test and Hip flexion test) was impaired compared to the control group ($p < .001$ for all tests). In the experimental group, the side of advanced hip arthrosis presented with significantly worse quality of postural stabilization comparing to the non-painful side ($p = .012$) and comparing to the control group, in which symmetrical quality of postural stabilization was confirmed ($p = .379$). Furthermore, a strong correlation was identified between the hip range of motion and postural stabilization ($r = .467 - .695$). A strong negative correlation was found between the hip joint pain assessed by the WOMAC questionnaire and the quality of postural stabilization assessed by DNS tests ($r = -.570$ to $-.677$).