A Comparison in Clinical Outcomes between Posterior and Anterolateral Approaches of Hip Resurfacing

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Purpose

To evaluate the clinical outcomes and hip muscle strength in patients undergoing hip resurfacing surgery using the posterior approach compared to the anterolateral approach.

Introduction

Recently, metal-on-metal hip resurfacing has experienced resurgence as an alternative to traditional total hip arthroplasty. Hip resurfacing is a technically demanding procedure, and the posterior or anterolateral approaches are mostly employed. Each approach has its own advantages and disadvantages. The aim of this prospective study was to evaluate the effect of the posterior or anterolateral approaches on hip muscle strength and other clinical outcomes.

Materials and Methods

Forty patients who underwent primary hip resurfacing surgery were enrolled in the study. The study protocol was explained to the all patients and they gave a written consent before entering the study. This prospective study was approved by our Institutional Review Board. The patients had a mean age of 42 years (range, 37 to 61 years). The diagnosis was primary osteoarthritis in 30 hips and osteonecrosis of the femoral head in 10 hips. Sixteen hips were performed hip resurfacing procedure through a posterior approach (Posterior group), and 24 were performed through an anterolateral approach (AL group). All patients were followed at 6 weeks, 3 months, 6months, and 1year after surgery. The results were assessed on the basis of Harris hip scores (HHS), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), and Visual Analogue Scale (VAS). Furthermore, maximal isometric abductor or flexor strength levels of the hip muscles were measured. Statistically significant differences were set at p<0.05.

Results

The duration of surgical procedure and the count of blood loss were comparable between the Posterior and AL groups. Moreover, the early clinical results of HHS, WOMAC and VAS were excellent in both groups, and there were no significant differences in these results (Figure 1). After a follow-up of 1 year, no hips had a failure that required revision.

Discussion

This results show that posterior approach was better in hip abduction strength than anterolateral approach. Preservation of gluteus medius and minimus results in maintenance of abductor function which is important for stabilizing gait function. AL approach has in common the division of the anterior 25 to 50% in the gluteus medius and minimus though they have been repaired during incision closure. In patients undergoing total hip arthroplasty through AL approach, most of them either recover or show few problem, but complete muscle denervation probably is present 10% of hips postoperatively. This complication is caused by damage to the superior gluteal nerve.

Conclusion

The posterior approach of hip resurfacing was significantly more effective to preserve hip abduction strength than the anterolateral approach. Other clinical outcomes in patients treated using the posterior approach was comparable to those using the anterolateral approach in a short term follow-up.

References

1. Treacy RB et al., J Bone Joint Surg Br, 2005
2. Kim C et al., CORR, 2004