Arthroscopic Treatment of Focal Osteochondral Lesions of the First Metatarsophalangeal Joint

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Background

This study aimed to assess the arthroscopic treatment, one of the surgical treatment options, for early grade focal osteochondral lesions of the first MTP joint, and to determine the impact of the arthroscopic microdrill hole surgery on foot function and daily life in a patient group with failed conservative treatment.

Material and Methods

This prospective study reviewed 27 patients having hallux rigidus with osteochondral injury of the first MTP joint who were operated with first MTP joint arthroscopy. Six patients had Coughlin-Shurnas grade 4 hallux rigidus and were excluded from the study; 5 patients were excluded due to having an arthroscopic kissing lesion, and 3 patients were excluded for not having attended regular follow-up after third month. After excluding the above patients, the study was completed with 14 patients.

Results

The mean hallux vagus angle was 13.29° (±1.93 SD) and the mean intermetatarsal angle was 9.14° (±0.86 SD). Apart from joint arthroscopy, no soft tissue procedure and/or any procedure requiring osteotomy was intended in any patient. The median operative duration was 27.8 (19-56) minutes. The patients had mean preoperative VPS and AOFAS-Hallux scores of 8.14±0.86 SD and 48.64±4.27, respectively; the corresponding postoperative values of both scores were 1.86±0.66 SD and 87.00±3.70. Both VPS and AOFAS-Hallux scores changed significantly (p<0.01).

Discussion

In this prospective study we explored the impact of arthroscopic microdrill hole surgery on foot functions and daily life activities in patients with focal osteochondral lesions of the first MTP joint. Our results indicated significant improvements in VAS and AOFAS scores with this treatment. The micro drill technique we applied in this study is based on the principle of opening 4-6-mm long tunnels to enable stem cells to migrate to the defected area and achieve cure by differentiation in full-thickness chondral injuries with exposed subchondral bone. In conclusion, arthroscopic microhole drill technique can be applied with impressive functional scores and without any complication in persons who failed conservative therapy for hallux rigidus with focal chordal injury, a common foot problem. There is a need for comparative studies with long follow-up period in this field.

Keywords: Metatarsophalangeal joint, Hallux Rigidus, Arthroscopy

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