

Osteochondral Defects in Hallux Rigidus: Does their Presence and Treatment Affect Outcomes Following Dorsal Cheilectomy?

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Introduction/Purpose: Hallux rigidus, or 1st metatarsophalangeal (MTP) joint degeneration, is commonly encountered in foot and ankle practice. Operative management can include a dorsal cheilectomy, a motion sparing procedure to reduce impingement. Hallux rigidus affects patients across all age groups, and etiologies may include trauma, first ray hypermobility, pes planus, or hallux valgus. First MTP joint trauma may result in an osteochondral defect (OCD). Literature is sparse regarding OCD management in the 1st MTPJ, as is follow-up data on cheilectomy using validated outcome measures. We hypothesize that the presence of an OCD is associated with symptomatic hallux rigidus at a lower Coughlin and Shurnas grade. We also hypothesize that OCD treatment concurrent with cheilectomy leads to outcomes equivalent to patients treated with isolated hallux rigidus.

Methods: A retrospective review of prospectively collected data was performed. All patients of a single surgeon were reviewed based on the CPT code (28289) for cheilectomy from 1/1/2011 to 12/31/2015. Demographic data, presence/drilling of an OCD on operative reports, and Coughlin grading were recorded. All patients had taken the FAAM and SF-36 preoperatively per the surgeon's routine preoperative data collection. After approval by the institutional review board, all patients were contacted by telephone for follow-up and answered the FAAM, SF-36 and Patient Acceptable Symptom State (PASS) questionnaires. Visual analog scores (VAS), patient satisfaction, complications, and whether they would opt for surgery again were recorded. Paired T-tests were performed to evaluate improvement in FAAM activity of daily living (ADL), FAAM sport, SF-36 physical component scores (PCS), and SF-36 mental component scores (MCS). Two-tailed T-tests were performed to evaluate the difference in groups with and without OCDs.

Results: Seventy-one patients met inclusion criteria. Follow-up was obtained from 28 patients (29 feet) for analysis, 10 with OCDs. Mean responder age was 53.1 years (32.6-70.9), with average 4 year follow-up (minimum 2 years). Patients with OCDs had lower Coughlin grade ($p<0.01$) and trended towards lower age ($p=0.07$), but similar improvement in FAAM sport ($p=0.43$), SF-36 PCS ($p=0.33$), and MCS ($p=0.46$). Patients with OCDs trended towards greater improvement in FAAM ADL ($p=0.07$). The entire cohort demonstrated significant improvements ($p<0.01$) in ADL, Sport, PCS, and MCS after cheilectomy. ADL and Sport scores met the MCID of 8 and 9 points, respectively. MCID is not well-defined for SF-36. One patient required subsequent fusion.

Conclusion: Cheilectomy is an effective surgical option for improving function and pain in the setting of hallux rigidus, as measured at intermediate-term follow-up with validated patient outcome measures. Patients with a 1st MTP joint OCD become symptomatic at a younger age and with a lower radiographic grade of hallux rigidus. These patients demonstrate equivalent improvements in the FAAM sport, SF-36 PCS and MCS while trending towards greater improvement in the FAAM ADL score as those without OCDs. The presence and treatment of a 1st MTP joint OCD should be considered in younger patients with symptomatic hallux rigidus and lower radiographic severity.

