The purpose of this study is to identify biopsychosocial patient attributes which may influence surgical outcomes following hallux valgus surgery using a validated instrument for use in surgical outcomes research.

METHODOLOGY

We prospectively studied 24 consecutive adult subjects undergoing hallux valgus surgery for medial bump pain at our institution from July 2014 to March 2015. All subjects underwent a Scarf bunionectomy or a Scarf in combination with an Akin osteotomy, both with lateral soft tissue release.

Primary Predictor Variable: Patient personality traits were assessed using the Brief Battery for Health Improvement 2 (BBHII) 2 survey, which has strong psychometric properties and covers multiple physical and psychosocial functioning domains that are known to be predictive of surgical outcome.2 Primary personality and aggression were assessed using the Ten Item Personality Inventory (TIPI)2 and Brief Aggression Questionnaire (BAQ).3

Primary Outcome Measure: Surgical outcomes were reported by patients through the Foot and Ankle Outcome Score (FAOS) survey, which has been validated for use in HVS.4

RESULTS

A series of multiple regression analyses were conducted to examine associations between psychological functioning (8 BBHII 2 domains [Fig. 3]) and surgical outcomes (15 FAOS domains) (Table 2).

Figures 3 and 4. Histological alignment pre-operatively and following hallux valgus surgery.

Surgical technique:

All operative procedures include a scarf bunionectomy with lateral soft tissue release, as described below:

A linear incision is made on the medial plantar aspect of the first MTP joint of the left foot. Using a lenticular capsular approach, the capsular structures are freed from attachments on the dorsal, medial, and plantar aspects of the first MTP joint. A capsulotomy is released with a Miltex elevator, allowing for the repositioning of the capsulomeatal structures, with care taken to preserve the blood supply to the sesamoid apparatus. An osteotomy guide is used on the first metatarsal, allowing for lateral and plantar displacement of the first metatarsal head- shaft segment and correction of the distal metatarsal articular angle (DMAA). The osteotomy is appropriately positioned, held in place with a bone clamp and fixed using 2 headless screws. The redundant bone is removed. Capsulotomy and capsuloplasty are performed, maintaining the toe in the corrected position, and are re-approximated with multiple sutures of 2-0 Vicryl. Skin edges are brought into apposition and maintained using a subcuticular 5-0 absorbable suture. Surgical adhesive strips are applied to the site superficially.

Postoperatively, patients will be in bandages for one week. At that time, patients will be allowed to return to guarded weight bearing in a gym shoe and a standard protocol of formal physical therapy for 4 weeks will commence. Return to full activity will occur 7-8 weeks postoperatively depending on patient progress.

Figures 2.

Figure 2. Sample BBHII 2 Patient Summary Report, including 6 personality domains and a Critical Items List. Scores outlying the normal (shaded) range are detected and interpreted.

Figure 3. Baseline BBHII 2 Scores.