INTRODUCTION

Over the past decade, the number of unicondylar knee arthroplasties (UKA) performed has increased by 30%. Patients tend to prefer this treatment option as it is shown to provide better function and range-of-motion (ROM). While they do offer benefits, UKAs often have to be revised. To address this, a customized, individually-made (CIM) UKA offers patient-specific fit and positioning, reducing the incidence of underhang and component malpositioning, common causes of tibial loosening and subsidence. The purpose of this study was to assess clinical and patient-reported outcomes utilizing this CIM unicondylar knee replacement (UKR) prosthesis.

METHODS

A prospectively recruited cohort of 118 patients were implanted with 120 CIM UKR (110 medial and 10 lateral) at 8 centers (Table 1). Patients who were diagnosed with unicompartmental osteoarthritis of the medial or lateral compartment and consented to take part in the study were included. Patients with a BMI >35, compromised cruciate or collateral ligaments, or who had a varus/valgus deformity >15° were excluded from the study. Using the Knee Society Knee and Function Scores, WOMAC and VAS Pain scales as well as ROM tests, patients were assessed pre-operatively, at 6-months post-op, 1 year post-op and 2 years post-op. Patients were also asked about their satisfaction level and if the movement of their implanted knee felt natural.

RESULTS

Range-of-motion was improved by an average of 11° from 120° pre-operatively to 131° at 2 years post-op (116° at 6 weeks, 129° at 6 months, and 129° at 1 year) (Figure 1). Patients demonstrated marked improvements from baseline scores across all measured domains. A total of 88 patients have reached their 2-year follow-up visit to date. Average scores at the 2-year interval are as follows: KSS Knee Score - 94, KSS Function - 91, scaled WOMAC - 90, and VAS Pain - 1.3 (Figure 2). Additionally, 99% of patients said they were satisfied with their UKR (89% reporting they were very or extremely satisfied) and 89% stated that the movement of their knee felt natural (Figure 3). To date, 2 patients have undergone revision for tibial loosening and 2 additional patients were revised for disease progression yielding a cumulative revision rate of 3.3% at an average follow-up of 2 years.

DISCUSSION

As the number of UKAs performed each year increases, ensuring patient satisfaction is critical. The 2-year follow up data collected on this CIM UKR is promising as 99% of patients reported that they were satisfied with their CIM UKR and 89% reported that the movement of their knee felt natural. Additionally, this data compares favorably to published scores for traditional, off-the-shelf unicompartmental implants.