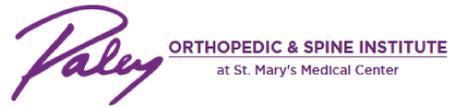


Functional & Radiographic Outcomes Following Minimally Invasive Bunion Correction

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Statement of Purpose

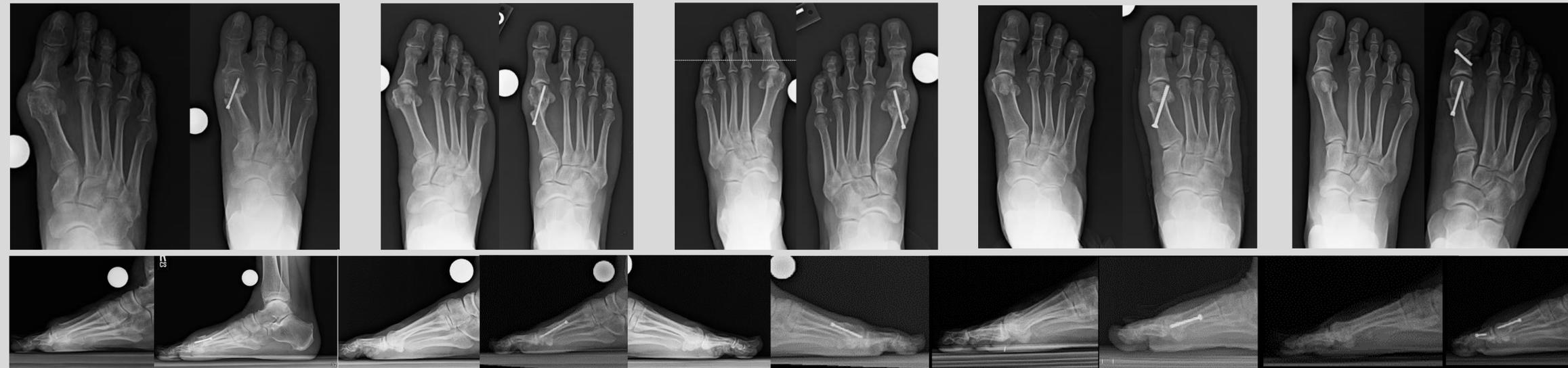
The touted advantages of percutaneous surgery include quicker operative times, decreased tissue trauma, expedited rehabilitation, and fewer complications. The aim of this study was to assess functional outcomes in patients after undergoing minimally invasive bunion correction.

Methodology & Procedures

31 bunions were corrected in 25 patients utilizing a minimally invasive approach. The primary method of fixation was a single partially-threaded, cannulated, 4.0mm screw. In the most cases, medial capsular reefing was performed through the minimal approach. Patients were allowed to weight bear in a stiff-soled shoe post-operatively. Follow-up duration averaged 12 months. Functional outcomes were assessed utilizing the Manchester Oxford Foot Questionnaire (MOxFAQ). Radiographically, osteotomy healing and maintenance of reduction were assessed.

Literature Review

In 2000, Bösch et al reported on 98 bunions treated with a minimally invasive approach, citing high patient satisfaction and excellent radiographic outcomes at 8.75 years (1). While others have reported success as well, complications are not uncommon, potentially owing to the multiple methods that have been described to achieve correction in a minimally invasive manner (2,3). In 2016, Khosroabadi and Lamm published their unique method of percutaneous HAV correction, requiring no special equipment and with minimal tissue disruption (4). Utilizing a multiple drill hole osteotomy, thermal necrosis to the metatarsal is limited, thereby allowing maximal healing potential for the osteotomy. The 1.8mm wire utilized to create the drill holes allows for an accurate and precise osteotomy at the metaphyseal level. This technique has since been modified, including a percutaneous medial capsular reefing, if necessary, performed by passing suture through the medial joint capsule utilizing the minimally invasive osteotomy incision.



Demographics & Complications

n = 31 Bunions 25 patients		
Age	Avg. 42yo	Range (14-76)
Sex	Female 21	84%
Hallux osteotomies	2	6%
Medial Capsular Reefing	25	81%
Infection	Superficial 1 Deep 0	3% 0%
Non-unions	0	0%
Hardware Removal	1	3%
Loss of Reduction	1	3%
Repeat Surgery (Excluding HWR)	0	0%



Results

- MOxFAQ scores averaged 94/100
- The MOxFAQ has been validated for use with HAV (5)
- All patients were allowed to weight bear post-operatively
- All patients were satisfied with their decision to undergo surgery
- All but 2 patients rated their 1st MPJ motion as superior compared to preoperatively
- There were no non-unions, and complications were minimal and minor

Analysis & Discussion

Minimally invasive bunion correction is becoming an increasingly popular method of treatment, often times being specifically sought out by the patient. Although there is a considerable learning curve, our method of percutaneous correction produces high patient satisfaction rates with minimal complications. Angular radiographic corrections were not formally assessed, as these have been shown to be not well correlated with patient-centered outcomes (6). Rather, we contend that avoiding joint invasion is paramount to the success of the minimally invasive technique. In this way, MPJ stiffness is averted, and function maintained. This promotes, along with excellent cosmesis, optimal patient acceptance. With our approach, soft tissue and osseous trauma are minimized, as evidenced by the uniform osteotomy healing and low rate of complications.

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