ORIGINAL RESEARCH

Evaluation of functional outcomes of proximal fibular osteotomy in osteoarthritis knee

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ABSTRACT
Background: The present study was conducted for evaluating functional outcomes of proximal fibular osteotomy in osteoarthritis knee. **Materials & methods:** A total of 20 patients were assessed. Knee pain was assessed using a Visual analogue scale. Medical joint space and the hip knee-ankle angle was measured. based on the whole lower extremity radiograph. **Results:** Mean age of the patients was 48.3 years. Mean VAS improved significantly from preoperative value of 8.53 to 2.8 at 8 months postoperative follow-up. Significant improvement was observed in the Mean knee joint space from preoperative value of 0.29 to 0.61 at 8 months postoperative follow-up. Significant improvement was observed in the mean hip knee ankle angle from preoperative value of 188.3 to 174.2 at 8 months postoperative follow-up. **Conclusion:** For managing medical compartment arthritis of knee, PFO is a novel alternative method.
Key words: Proximal fibular osteotomy, Knee, Osteoarthritis

INTRODUCTION
Osteoarthritis (OA) is a chronic degenerative disorder of multifactorial etiology characterized by the loss of articular cartilage, hypertrophy of bone at the margins, subchondral sclerosis, and range of biochemical and morphological alterations of the synovial membrane and joint capsule.Pathological changes in the late stage of OA include softening, ulceration, and focal disintegration of the articular cartilage. Synovial inflammation also may occur. Typical clinical symptoms are pain, particularly after prolonged activity and weight-bearing; whereas stiffness is experienced after inactivity. It is probably not a single disease but represents the final end result of various disorders leading to joint failure. It is also known as degenerative arthritis, which commonly affects the hands, feet, spine, and large weight-bearing joints, such as the hips and knees.[1- 3]

The pathogenesis of osteoarthritis is multifactorial and interrelated. There are three major processes, including mechanical wear-and-tear, structural degeneration, and joint inflammation. The main process is believed to be due to the overuse of the joint and aging, although increased levels of several cytokines and chemokines in the affected joints' synovium suggest an inflammatory process is also present. Matrix metalloproteinases are activated and cause degradation of the cartilage extracellular matrix. The stress to cartilage promotes chondrocyte proliferation and activation, leading to the production of matrix-degrading enzymes. Later in the disease, chondrocytes undergo apoptosis, and the number of cells decreases overall.[4- 6]Hence; under the light of above mentioned data, the present study was undertaken for assessing the functional outcomes of proximal fibular osteotomy in osteoarthritis knee.

MATERIALS & METHODS
The present study was conducted for evaluating Functional outcomes of proximal fibular osteotomy in osteoarthritis of knee in20 patients. After spinal anesthesia was given, the patients were put to sleep in a supine position. Following surgery, full weight bearing and unrestricted mobilization were permitted. Knee pain was assessed using a Visual analogue scale. Based on the whole lower extremity radiograph, the hip-knee-ankle angle and medical joint space were measured. Two lines were drawn: line B went from the center of the knee to the center of the ankle, and line A went from the center of the femur head to the center of the knee. The hip-knee-ankle angle was the intersection angle a between lines A and B. SPSS

software was used to evaluate all of the results, which were all entered into Microsoft Excel sheets.

RESULTS

Mean age of the patients was 48.3 years. Mean VAS improved significantly from preoperative value of 8.53 to 2.8 at 8 months postoperative follow-up. Significant improvement was observed in the Mean knee joint space from preoperative value of 0.29 to 0.61 at 8 months postoperative follow-up. Significant improvement was observed in the mean hip knee ankle angle from preoperative value of 188.3 to 174.2 at 8 months postoperative follow-up.

Table 1: Mean VAS score at different time intervals

Time interval	Mean VAS	p- value
Pre-operative	8.53	0.000 (Significant)
Postoperative	7.1	
Postoperative 5 weeks	4.5	
Postoperative 5 months	2.9	
Postoperative 8 months	2.8	

Table 2: Mean knee joint space at different time intervals

Time interval	Mean joint space	p- value
Pre-operative	0.29	0.000 (Significant)
Postoperative	0.37	
Postoperative 5 weeks	0.49	
Postoperative 8 months	0.61	
Postoperative 8 months	0.53	

DISCUSSION

Knee osteoarthritis (KOA) is a multi-etiological, chronic disabling disease that affects the entire knee joint, which is the most common site of involvement in OA. KOA is classified as primary or secondary depending on etiology. The pathogenesis of primary KOA is complex and involves numerous factors, such as mechanical stress, inflammation, metabolism, immunity and genetics, with age, genetics, body weight, sex and race being risk factors. By contrast, secondary KOA is primarily caused by either trauma, congenital articular dysplasia or iatrogenic injury. The pathological changes of KOA are not passive degenerative or wear-and-tear lesions but active changes caused by an imbalance between articular tissue damage and repair.[7- 10]

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CONCLUSION

PFO is a novel alternative method in the management of medial compartment arthritis of the knee.

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