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FUNCTIONAL OUTCOME OF PROXIMAL FIBULAR OSTEOTOMY IN OSTEOARTHRITIS KNEE- PROSPECTIVE STUDY

Orthopaedics

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ABSTRACT

Objective- The aim of study was to evaluate the effect of proximal fibular osteotomy in relieving pain and functional improvement in patients of osteoarthritis knee. **Method-** In a period of 2 year (November 2020- November 2022), 14 patients with predominant medial compartment osteoarthritis were operated in department of orthopaedics, GSVM medical college, Kanpur, Uttar Pradesh. 2 cm long fibula was resected 7 cm to 10 cm distally from head of fibula and outcome were evaluated by using Knee Society Score (KSS) and Visual Analogue Scale (VAS) score. **Results-** The mean visual analogue scale (VAS) score decreased from 7.46 ± 1.12 (range 6 to 9) preoperatively to 7.15 ± 1.21 (range 5 to 9) postoperatively ($P<0.05$). Pre-operatively, the mean knee society score (KSS) were 54.54 ± 11.89 and postoperatively score were 54.11 ± 15.06 ($P>0.05$). Post-operatively 2 patient (14.28%) developed weakness of Extensor halluces longus which recovered within 6 month and 1 patient (7.16%) developed numbness over lateral aspect of foot which recovered within 6 week. **Conclusion-** In short term study, Proximal Fibular Osteotomy does not provide significant pain relief and functional wellbeing to the patients of knee osteoarthritis.

KEYWORDS

Proximal Fibular Osteotomy, Knee, Osteoarthritis, Medial Compartment.

INTRODUCTION

Osteoarthritis (OA) is a chronic degenerative disorder of multifactorial etiology characterised by the loss of articular cartilage, hypertrophy of bone at the margins, subchondral sclerosis, and range of biochemical and morphological alteration of the synovial membrane and joint capsule[1]. Knee osteoarthritis is a common joint disease with an incidence of 30% of the population older than 60 years[2]. Early clinical symptoms of knee osteoarthritis include pain, stiffness and limitation of movement. Eventually with the progression of the disease, there is knee varus deformity and joint failure leading to chronic pain and disability. OA of the knee is a major cause of mobility impairment, particularly among females[3]. Apart from the lifestyle and pharmacological approaches there are various surgical alternative also available for the treatment. The surgical options include arthoscopic debridement, cartilage repair surgery, osteotomy with axis correction, and uni-compartmental or total knee arthoplasty (TKA).

We performed this research with the aim of study the functional outcome of proximal fibular osteotomy in osteoarthritis knee using Knee Society Score.

MATERIAL AND METHOD

The research was carried out in the department of orthopaedics , GSVM medical college, Knapur, Uttar Pradesh during November 2020 to November 2022, in patients of medial compartment osteoarthritis of knee joint, between the ages of 42-65 years(Mean age 51.57). Ethical clearance was obtained before beginning of the study. Patients with moderate to severe symptomatic degenerative osteoarthritis of knee, on whom conservative treatment has failed and have given informed consent, were included in the study. Patients who have inflammatory or post traumatic osteoarthritis of knee or have any history of previous operation or fractures around the knee were excluded from the study.

Total 14 patient with medial compartment osteoarthritis were operated during this period. These all patient were included in our study and were followed up prospectively starting from immediate postoperative period, at 3 weeks , 6 weeks, 3 months, 6 months and 1 year, and were assessed as per standard proforma.

Surgical Technique

We used posterolateral approach for exposure of proximal fibula. The head of fibula was palpated and surface marking of the head with length of incision and osteotomy site was done (Fig. 1).

Approximately a 5 cm long incision was made over the posterolateral border of fibula centred over the point 7 cm below the head of fibula. Fascia between peroneus longus and soleus muscle was identified and cut. Fibula was exposed from posterolateral aspect(Fig.2).

Fig.1. Surface Marking Of Head Of Fibula With Length Of Incision And Osteotomy Site.

Fig.2. Fibula Exposed.

A 2 cm section of fibula was excised 7 cm below the fibular head (Fig.3). The osteotomy can be done by either multiple drill hole and osteotome or Gigli saw or oscillating saw. The muscle fascia, skin were closed separately in layers after ample irrigation with normal saline.

Fig.3. 2 cm Section of Fibula Resected.

The patient were ambulated as early as possible after the anaesthesia wore off. Also static knee exercise was started and the patient were made to walk as per comfort level.

RESULTS

We compared the pre-operative KSS and VAS score with KSS and VAS score at 1 year follow up.

The mean visual analogue scale (VAS) score decreased from 7.46 ± 1.12 (range 6 to 9) pre-operatively to 7.15 ± 1.21 (range 5 to 9) post-operatively (P<0.05). Pre-operatively , the mean knee society score (KSS) were 54.54 ± 11.89 and post-operatively score were 54.11 ± 15.06 (P>0.05).

Table 1- Result As Per Knee Society Score.

Results	No. of patient	Percentage
Poor	8	57.14%
Fair	4	28.57%
Good	2	14.28%
Excellent	0	0

Table 2- Table Showing Complication

Complication	No. of patient	Percentage
Weeknessof EHL	02	14.28%
Numbness over lateral aspect of foot	01	7.16 %
Surgical site infection (SSI)	00	00

DISCUSSION

In our study, we selected patients with predominantly medial compartment osteoarthritis of knee joint who visited our OPD in the department of Orthopaedics. The patients went through detailed clinical and radiological examination as per standard proforma. All selected patients after taking written/informed consent underwent a surgical procedure “Proximal Fibular Osteotomy” and the outcome was evaluated and compared with other previous similar studies.

Mansoor et al[4] reported the mean age of 51.80 year. Dr. Chakarvarthi et al[5] reported similar complication with EHL weekness in 20.0% patient and paraesthesia in 7.30%. AamirBin Sabir et al[6] reported pre –operative VAS score of 7.33 ± 0.72 which decreased to 7.13 ± 1.64 at final follow up. In our study mean age is 51.57 year with pre-operative VAS score was 7.46 ± 1.12 and post-operatively 7.15 ± 1.21. 2 patient (14.28%) reported weekness of EHL and 1 patient (7.16%) developed paraesthesia.

In our study, pre-operatively, the mean knee society score (KSS) were 54.54 ± 11.89 and postoperatively score were 54.11 ± 15.06 (P>0.05).

CONCLUSION

We concluded that Proximal Fibular Osteotomy is a simple, and safe procedure but not a good option for pain relief and functional wellbeing in patient of osteoarthritis knee.

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