



ISSN: 2395-1958
IJOS 2017; 3(3): 1185-1187
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www.orthopaper.com
Received: 12-05-2017
Accepted: 15-06-2017

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A study of deformity of osteoarthritis in Indian population

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DOI: <https://doi.org/10.22271/ortho.2017.v3.i3p.2837>

Abstract

Osteoarthritis (OA) of knee is most common disorder noted in elderly patients with knee pain. Majority of these patients present with substantial knee deformities, especially varus deformity in India. Many studies have been published in Indian literature regarding the magnitude of knee deformities, but our study projects large number of cases which can give insight of knee deformities.

Keywords: Deformity, osteoarthritis, Indian, population

Introduction

Osteoarthritis of knee is most common disorder noted in elderly patients with knee pain [1-4]. Majority of these patients present with substantial knee deformities, especially varus deformity in India. Many studies have been published in Indian literature regarding the magnitude of knee deformities, but our study projects large number of cases which can give insight of knee deformities. It is basically characterised pathologically by focal degeneration of articular cartilage, subchondral bone thickening, osteophyte formation and joint deformity [5-7]. Due to increasing pain, muscle spasm develops which subsequently causes joint deformities, genu varus being the most common [1]. In spite of successful outcomes of total knee arthroplasty, it is not uncommon to see patients presenting with severe knee deformities in India. Ignorance, fear of surgery, lack of expert medical care, expense of surgery and seeking care from alternative forms of medicine could be the reasons for delayed presentation of such cases [8-10]. Thus such cases present with profound knee deformity, unyielding knee contractures and bony defects. Restoring knee alignment to anatomical norm of 5 -7 degrees valgus may be difficult and may require intraoperative ligament releases and/or ligament tensioning to achieve proper soft tissue balancing. Failure to realign knees surgically will subsequently lead to premature loosening and implant failures [11]. In our Prospective study, we aimed to address deformity particularly knee varus in osteoarthritis patients which are undergoing total knee replacement. This study puts in an effort to find the deformity.

Aims and Objectives

To find the deformity of osteoarthritis in Indian population.

Materials and Methods

The study was done in the Department of Orthopedics, Srinivas Institute of Medical Sciences, Mangalore. The study was done in 100 patients. The study was done from Nov 2015 to Oct 2016.

Inclusion Criteria

Confirmed cases of osteo-arthritis

Exclusion criteria

Any other bone deformity.

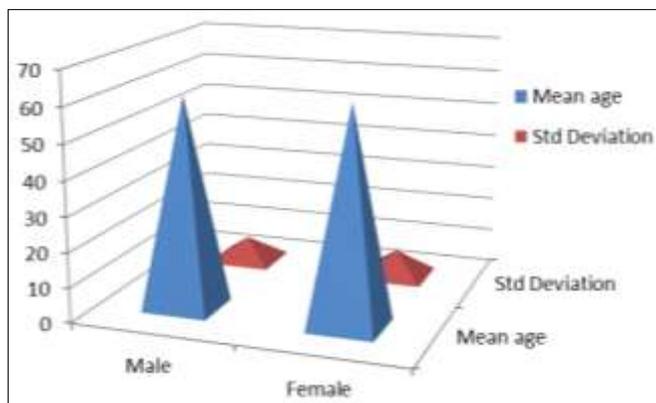
Procedure: The Patients who consulted at arthroplasty OPD and admitted for undergoing unilateral total knee replacement, were included in the study.

Correspondence

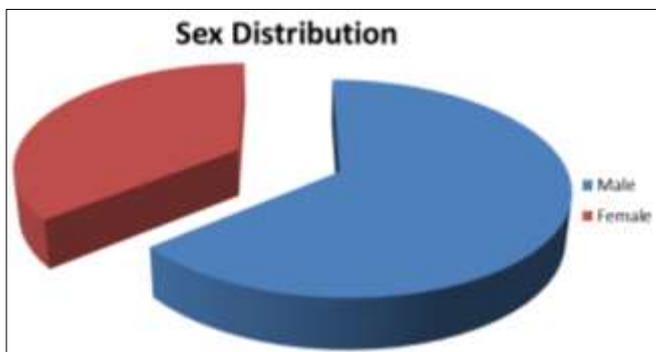
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The study participants who fulfilled inclusion criteria and gave informed consent were included in the study. Fifty patients were included for the study. In our analytic prospective study, we aimed to describe the deformity particularly knee varus in osteoarthritis patients who were planned for total knee replacement. Patient was made to stand over the wooden board and the cassettes are adjusted according to the height of the patient to cover hip, knee and ankle joints. For heavy built patients x-ray of both limbs was not possible in single film and so one by one exposure was done for each leg. Patient remained standing erect with knees in maximum extension and both patella facing forward towards the tube and feet 18 inch apart. Distance between tube and patient was about 6 feet. Xray tube was placed facing towards the patient and xray beam was centered at the level of knee joint.

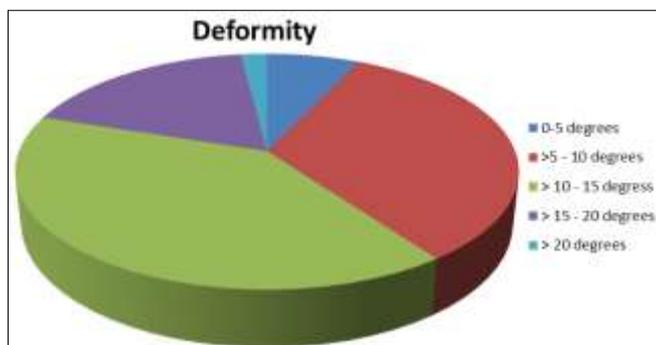
Results



Graph 1: Age wise Distribution



Graph 2: Gender Distribution:



Graph 3: Varus Deformity Angle

Discussion

A study which contained 75 primary severe varus (more than 20 degrees) knees in 52 patients who underwent total knee

arthroplasty (TKA) surgery in India. Age of patients ranged from 52 to 76 years. They divided patients into 4 groups based on severity of knee varus deformity. Among these study groups, Group A (20-25 degrees varus) had 31 patients, Group B (26-30 degrees varus) had 31 patients, Group C (31-35 degrees varus) had 8 patients and Group D (36-40 degrees varus) had 5 patients. 29 patients underwent unilateral TKA and 23 patients underwent bilateral TKA. Among 29 patients who underwent unilateral TKA, 15 patients also had contralateral side involvement with less than 20 degree varus deformity, for which TKA surgery was done. Overall pre-operative KSS knee score in these patients was noted to be 28.9. Functional KSS score was noted 41.9, 27.6, 7.5, 17.0 in groups A, B, C, D respectively. Overall pre-operative functional KSS score was 30.6. There were 32 female and 20 male patients in this study. They concluded that patients with severe varus deformities can be managed successfully by total knee arthroplasty with medial soft tissue release and bony defect reconstruction. All of these patients had osteoarthritis of knees as their primary diagnosis. Another study had patients with diagnosis of OA knee who were planned for TKA, in India. It was community based, randomized cross-sectional study of 1986 patients. All of these patients had varus deformity of knees. Statistically significant association was noted between knee osteoarthritis and age more than 50 years. Odds ratio of having knee OA in patients with age >50 years was 7.7 (6.2-9.6) times more as compared to patients aged < 0.05). Males have significantly lesser risk for developing knee OA¹²⁰. Higher incidence of OA knees in women, has suggested that estrogen deficiency plays very significant role and make them much more prone for developing OA knees, especially after getting into menopausal age group. Previously done cohort studies had reported that women who took the estrogen tablets have lesser prevalence of osteoarthritic knees in them. Their study found positive association between presence of diabetes mellitus (DM) and OA knees.

Conclusion

The study has been successful to show that the deformity in osteoarthritis is there. And more the time between the deformity and the operative corrections more the chances of developing post-operative deformity.

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