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Short Communication

Difference between right and left side in total knee and unicondylar knee replacement: An interesting observation

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Abstract:

We report an observation made about the differences between right and left side in case of total knee and unicondylar knee replacement. It was found that unicondylar knee replacement was performed more commonly on the left side (66%), as compared to only 34% on right side, where as total knee replacement was more common on the right side (64%) as compared to 36% on left side. The exact clinical utility of this difference is yet to be known.

Key Words: Unicondylar knee replacement, Total knee replacement

Introduction

It is a well known fact that total knee replacement (TKR) is the treatment of choice of advanced degenerative osteo-arthritis of knee, where as

unicondylar knee replacement (UKR) is done for isolated uni-compartmental osteoarthritis of knee mainly the medial tibio-femoral compartment.(1) However, it is not very clear from the available literature whether there are any obvious differences between the right and left side regarding knee replacement surgeries. We carried out a retrospective analysis of cases of knee replacement surgeries to study any differences between the two sides with regard to both TKR and UKR.

Material and Methods:

A retrospective analysis of the case notes of 100 consecutive patients who underwent TKR and 50 consecutive patients with UKR was done in the department of Orthopaedics at Medway Maritime Hospital with regard to the type of operation (TKR or UKR) and the side (right or left) on which the operation was done.

Results:

It was found that UKR was done in cases of isolated unicompartamental osteoarthritis, mainly medial tibiofemoral osteoarthritis and TKR was mainly performed in advanced osteoarthritis.

Of the total 100 cases with TKR, it was found that 64 (64%) of patients had right sided TKR and 36 (36%) had left sided TKR.

Of the 50 cases of UKR, it was found that surgery was done on the left side in 33 (66%) patients and on the right side in 17 (34%) cases. (Table 1)

Table 1: Comparison of Total Knee Replacements and Unicondylar Knee Replacements

Type of Surgery	Total no. of cases	Right side	Left side
TKR	100	64 (64%)	34 (34%)
UKR	50	17 (34%)	33 (66%)

Discussion:

While TKR (bicompartamental or tricompartmental) is the treatment of choice for advanced degenerative osteoarthritis with involvement of both tibiofemoral compartments with or without involvement of patellofemoral compartment, UKR is done for isolated unicompartamental osteoarthritis, especially for medial tibiofemoral osteoarthritis.(1)

It is not very clear from the literature about the differences between the right and left side in replacement surgery of knee, for both TKR and UKR. Naeme R et al (2), in a study about the distribution of radiographic osteoarthritis between the right and left side in hand, hip and knee have shown that the osteoarthritis of knee is more prevalent on the right side. The study laso showed that at tibiofemoral joint, medial compartment was narrower and lateral compartment wider on right side, and knee joint osteophyte score was also greater on the right side. This discordance was attributed to biomechanical factors in the pathogenesis of side specific osteoarthritis.(2)

In our series, UKR was more frequently done on the left side (66%) as compared to TKR which was more frequently done on the right side (64%).

The exact clinical significance of this observation is not clear to us. Factors like difference in biomechanics in side-specific osteoarthritis (2), uneven distribution of osteoarthritis of knee between right and left side or either early or late presentation of either side of knee osteoarthritis may hold the key to the answer. The right sided dominance in majority of the population may also play some role.

More studies, including multi-centric, are needed in this regard and this may be quite valuable for implant makers to have an appropriate ratio of the implants for each side.

References

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