INTRODUCTION

The surgical treatment of unicompartmental osteoarthritis of the knee remains controversial. There is little independent evidence comparing unicompartmental knee replacement (UKR) against total knee replacement (TKR).

AIM

To compare the medium-term outcomes of age and gender matched patients treated with UKR and TKR.

METHOD

We retrospectively reviewed:
• Pain, function and total knee society scores (KSS)
• Medical complications
• Survivals years
• Reasons for revisions and KSS post-revisions for every UKR and age and gender matched TKR in NHS Tayside. All data was collected independently by Tayside Arthroplasty Audit Group (TAAG).

Mann-Whitney test was used to assess the statistical significance between UKR and TKR groups. Kaplan-Meier with log rank test was used for survival analysis.

RESULT

• 602 UKRs were implanted between 2001 and 2013.
• The KSS (function) remained significantly better in UKR from pre-operative until 3 years follow up (Figure 1). However there was no statistically significant difference in the change of function scores over time for both UKR and TKR.
• This result is contrary to UKR reports of improved function with time(1).

Figure 1: KSS (function) over 5-years follow up.

• There was a trend for TKR to perform better than UKR for KSS (pain), but this was not statistically significant (Figure 2).
• The total KSS for UKR and TKR was not significantly different at any point over the 5-years study (Figure 3).

Figure 2: KSS (pain) over 5-years follow up.

Figure 3: KSS (total) over 5-years follow up.

• There were fewer medical and wound complications in UKR group.
• The incidence of thromboembolism was similar in both groups and contrary to existing literatures which suggests TKR carries a higher risk of thromboembolic event than UKR(2).
• 6.30% of UKRs required revision whereas 2.99% of TKRs required revision (p = 0.012) (Figure 4).
• The main cause for revision surgery in UKRs was aseptic loosening, followed by osteoarthritis of the contralateral compartment (Figure 5).
• Literature suggested that the higher incidence of revision of UKRs is often due to poor patient selection(3).
• Poor patient selection is not a direct cause of aseptic loosening.
• UKR did not universally prevent the progression of osteoarthritis in other compartments as suggested in some published literature (3).
• We found no difference in pre-operative revision scores, suggesting that the revision thresholds were the same in both groups.

Figure 4: Kaplan-Meier survival analysis.

Figure 5: Reasons for revisions.

CONCLUSION

• There is a significantly higher rate of implant failure with UKR albeit lower post-operative complications.
• The theoretical advantages of UKR are not borne out by the findings in this study other than immediate post operative complications.

REFERENCES


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