Half-time Review

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An international Registry Study of Revision Total Knee Replacement.

Abstract

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ABSTRACT

Background: While primary knee replacement incidence is increasing worldwide, less is known about revision surgery. Revision surgery is infrequently studied due to its heterogeneity and complexity. Revision is determined by a combination of patient, prosthesis and surgeon factors. Pooling multiple registries’ data should be more influential than individual registry findings.

Research Question/Method: Data from Arthroplasty Registries in Sweden, Australia and the USA was used:

1) to compare the incidence of primary and revision knee replacement, and the characteristics of those undergoing the procedures.

2) to determine variations and trends in the reasons for revision knee replacement surgery.

3) to evaluate the practice variations and their relationships with revision.

4) to detail revision procedures undertaken for specific reasons for revision.

5) to investigate a poorly understood but increasing reason for revision, instability.

Preliminary Results:

1) The incidence of knee replacement increased in all three countries for primary, and less so for revision surgery, but the rate of increase slowed. Although there was an increase in younger patients, the mean age for both primary and revision showed little change.

2) Infection, loosening and instability were in the 5 most common reasons for revision in each registry, but ranking and proportions varied. All showed an increase in revision for infection and a decrease in revision for wear.

3) Greatest between-registry practice variation was seen with prosthesis stability and patella component use. Common trends were decreases in mobile bearing use and non-XLPE.
4) In progress

5) Instability revisions are increasing. Ten years after revision 22% have had a second revision and recurrent instability is common.

**Significance:**

1) The increase in knee replacement incidence has slowed in the late 2010s. Revision procedures are increasing at a lower rate than primaries. These data may help predictions for future knee replacements.

2) Differences in revision reasons may relate to regional factors. While revision for loosening decreased, infection and instability increased. A better understanding of the increasing reasons is required.

3) Practice variation can explain some of the between-registry differences in revision surgery. Meta-analysis methods show “global” influences.

4) Understanding instability revision may help stop its increase.

**Publications:**


   [https://doi.org/10.1080/17453674.2020.1749380](https://doi.org/10.1080/17453674.2020.1749380)


   [https://doi.org/10.1080/17453674.2020.1853340](https://doi.org/10.1080/17453674.2020.1853340)