ORIGINAL ARTICLE

Causes for revision surgery in total hip replacement. A retrospective epidemiological analysis[☆]

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Abstract

Objective: To determine the impact of each cause of revision surgery in total hip arthroplasty during the period 2009–2013. To analyse the relationship between these causes with different variables.

Materials and methods: A study was conducted on 127 patients who had hip replacement revision surgery in our hospital during this period. Parameters, such as age, sex, date of primary arthroplasty, prosthetic replacement date, and main cause of the revision were recorded. Those revisions performed within 5 years after the primary arthroplasty were considered as early rescue.

Results: The most common cause of rescue was aseptic loosening in 38 (30%) followed by instability in 30 (24%).

In terms of age at the time of rescue, statistically significant differences were found, with it being significantly higher in patients re-operated for a fracture.

Differences in age at first surgery were found to be 7 years younger than those with late rescue (63.40) with respect to early (70.21).

Discussion: Similar results to ours have been observed in other published series, except for the higher incidence of instability in early rescue.

Conclusions: This study demonstrates aseptic loosening and instability as the most frequent causes of revision surgery in our hospital. Age is a very influential factor in relation to longevity of primary arthroplasty. Complications were higher in when the primary hip replacement is implanted in older patients.

Causas de cirugía de revisión en artroplastia total de cadera. Análisis epidemiológico retrospectivo

Resumen

Objetivo: Se pretende evaluar la incidencia de cada una de las causas de cirugía de revisión de artroplastia total de cadera en el periodo comprendido entre 2009 y 2013 con relación a diferentes variables.

Material y métodos: Hemos analizado 127 cirugías de revisión de artroplastia total de cadera realizadas en 127 pacientes en nuestro centro durante dicho periodo. Se registraron parámetros como edad, sexo, fecha de artroplastia primaria, fecha de reemplazo de prótesis y causa principal de reintervención. Se consideraron rescate precoz aquellas reintervenciones realizadas antes de los 5 años tras la artroplastia primaria.

Resultados: La causa de rescate más frecuente fue el aflojamiento 38 (30%) seguido de inestabilidad 30 (24%).

En cuanto a la edad en el momento del rescate, se encontraron diferencias estadísticamente significativas: los pacientes con reintervención por fractura eran significativamente mayores.

Se encontraron diferencias en cuanto a la edad en la primera cirugía: eran 7 años más jóvenes aquellos con rescates tardíos (63,40) con respecto a los precoces (70,21).

Discusión: Hemos observado resultados similares a los de las demás series publicadas, excepto una mayor incidencia de inestabilidad en rescate precoz.

Conclusiones: Este estudio demuestra el aflojamiento aséptico y la inestabilidad como causas más frecuentes de rescate en nuestro centro. La edad es un factor muy influyente en cuanto a la longevidad de la artroplastia primaria. Son mayores las complicaciones en pacientes en los cuales se implanta la artroplastia primaria de cadera a edad más avanzada.

Introduction

Hip replacement revision surgery is a habitual procedure in our centre. It is becoming increasingly frequent due to the higher number of primary prostheses implanted and the increasing age of the population. Data available to date show an increase in the incidence of total hip arthroplasty replacement in the Spanish population of from 20.2 to 21.1 per 100,000 inhabitants/year from 2001 to 2008, respectively.[1] In this period there has also been an increase in the incidence of primary hip arthroplasty from 99 to 105 per 100,000 inhabitants/year.[2] Due to this total hip replacement is now being used for an increasingly older age range, so that the corresponding patient profile has more comorbidities.[2]

The above-mentioned aspects of primary hip arthroplasty also apply to revision surgery, although they are even more marked. This procedure is now being used in an older population than is the case for primary surgery, with more comorbidities.[1] This is combined with longer times of surgery, more bleeding and therefore greater risks than those arising in primary surgery.

Due to the many reasons that lead us to the need to reoperate an implanted hip prosthesis, our series aims to evaluate the incidence of each one of the causes for total hip replacement revision operations performed in our centre during a 5-year period.

Materials and methods

All primary hip arthroplasty rescue surgeries from 1 January 2009 to 31 December 2013 were recorded retrospectively. Patient age and sex were recorded, together with the date of the primary hip replacement, the date of prosthesis replacement and the main cause of repeat surgery. Those re-operations performed before 5 years had passed after the first arthroplasty were classified as early revision surgery.

Exclusion criteria were: patients under the age of 18 years old, pregnant women, B2 periprosthetic fractures in which it was decided to use open reduction and internal fixing due to the poor general condition of the patient, revision arthroplasties of partial hip prostheses and rescue arthroplasty revision surgery.

Statistical analysis

Initially a descriptive analysis was undertaken, in which qualitative variables were expressed as frequencies and percentages. Continuous variables were expressed as an average ± standard deviation and the median (minimum–maximum). The Kolmogorov–Smirnov tests were used to detect the normality of the variables.

Parametric and non-parametric tests were used to determine the potential association between study variables (Chi-squared, Student's-t for independent samples and single factor Anova).

In all of the analyses differences when $P < 0.05$ were considered to be statistically significant. The analyses were carried out using SPSS 15.0.

Results

During the period from 1 January 2009 to 31 December 2013 a total of 127 hip rescue surgical operations were