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Original Article

Do patients lose weight after total hip arthroplasty?☆,☆☆

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ABSTRACT

Objective: To investigate the effect of total hip arthroplasty (THA) on body mass index (BMI), from before to after the operation.
Methods: 100 patients who underwent THA were retrospectively analyzed. They were stratified according to BMI, as proposed by the World Health Organization (WHO).
Results: There were 48 male patients and 52 female patients. Their mean age was 63.8 ± 13.5 years. The mean follow-up was 24.6 ± 0.6 months. The men had a mean preoperative BMI of 28.4 ± 3.6 kg/m^2 and the women, 27.5 ± 5.0 kg/m^2. The mean postoperative BMI was 28.9 ± 0.7 kg/m^2 for the men and 27.8 ± 0.7 kg/m^2 for the women. There was a general mean increase in BMI of 0.4 kg/m^2. The BMI increased both in patients with normal weight and in those who were overweight, but it decreased slightly in patients who were obese. BMI remained unchanged in the majority of the patients (73%).
Conclusion: The improvement in mobility achieved through THA did not promote any reduction in anthropometric measurements in the majority of the patients.

Os pacientes emagrecem após artroplastia total do quadril?

Palavras-chave:
Perda de peso

RESUMO

Objetivo: Investigar o efeito da artroplastia total do quadril (ATQ) no índice de massa corporal em relação ao pré e ao pós-operatório.

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☆☆ Work developed at the Orthopedics and Traumatology Service, Santa Casa de Misericórdia, Porto Alegre, RS, Brazil.
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Índice de massa corporal
Artroplastia de quadril
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Métodos: Foram analisados retrospectivamente 100 pacientes submetidos à ATQ. Os pacientes foram estratificados pelo índice de massa corporal (IMC), conforme proposto pela Organização Mundial de Saúde (OMS).
Resultados: Foram observados 48 pacientes do sexo masculino e 52 do feminino. A média de idade foi de 63,8 ± 13,5 anos. O seguimento médio foi de 24,6 ± 0,6 meses. Os homens apresentaram IMC pré-operatório médio de 28,4 ± 3,6 kg/m^2 e as mulheres, de 27,5 ± 5,0 kg/m^2. O IMC médio pós-operatório foi 28,9 ± 0,7 kg/m^2 para os homens e 27,8 ± 0,7 kg/m^2 para as mulheres. Ocorreu uma média de aumento geral do IMC em 0,4 kg/m^2. O IMC aumentou em pacientes com peso normal e com sobrepeso, mas diminuiu levemente em pacientes com obesidade. A maioria dos pacientes (73%) permaneceu com o IMC inalterado.
Conclusão: A melhoria da mobilidade obtida com a ATQ não promoveu uma redução das medidas antropométricas na maioria dos pacientes.

Introduction

The percentage of the obese population with osteoarthritis is growing within the worldwide population. The demand for total hip arthroplasty (THA) surgery has been continually increasing. There is evidence that the relative risk that an individual will need to undergo hip arthroplasty ranges from 1.92 among overweight individuals to 8.56 among those who are severely obese.[1] Quality of life seems to worsen in obese patients over the years following the procedure.[2–4] Therefore, losing weight before THA surgery is important and greatly encouraged,[5] given that a high body mass index (BMI) has been shown to be a risk factor for worsening of hip osteoarthrosis.[6] In addition, other objectives of weight reduction include diminishing the surgical risk and increasing the longevity of the implant.

Patients generally refer to coxarthrosis pain as the explanation for not losing weight during the period preceding the surgical procedure. Within this context, there is the idea that weight loss will take place naturally after surgery, since the patient will have less pain and functional limitation and will therefore be able to do physical exercise more easily. In this way, restoration of the patient's physical capacity is one of the aims of hip arthroplasty.[7]

The objective of the present study was to investigate the effect of hip arthroplasty surgery on body mass index, thus asking whether patients are able to lose weight after hip arthroplasty.

Patients and methods

The medical files of 100 patients who underwent THA between November 2008 and November 2011 were retrospectively analyzed. The inclusion criteria were that the patients needed to have had a diagnosis of hip osteoarthrosis, BMI ≥ 20 and minimum postoperative follow-up of 18 months. Those with incomplete records relating to demographic data or either of the two weight measurement times (before the operation and at a later postoperative stage) were excluded.

Weight and height were measured on conventional digital scales made by Urano, with a capacity of 180 kg and divisions of 100 g, which also had a measuring tape available. The BMI was calculated using the formula w/h^2, in which w is the patient's weight (kg) and h is his height (m). The patients were stratified at each time according to their BMI, as proposed by the World Health Organization (WHO),[8] in the following manner: normal weight (BMI < 25), overweight (BMI between 25 and 30) and obesity (BMI > 30).

Descriptive statistics and frequency distributions were observed. The groups were correlated by means of the t or chi-square tests, according to the variable under analysis. $p < 0.05$ was considered to be statistically significant. 95% confidence intervals (CI) were used. The data analysis was done using the SPSS for Windows software, v.14.

Results

There were 48 male patients (48%) and 52 female patients (52%). Just before the operation, the mean age of the sampled population was 63.8 years (standard deviation: ±13.5): 62.4 ± 14.3 years for the men and 65.1 ± 12.6 years for the women. The mean length of follow-up was 24.6 ± 0.6 months. The mean weight among the male patients was 84.5 ± 11.5 kg and among the female patients, 72.6 ± 13.9 kg. The mean height among the men was 1.72 ± 0.07 m and among the women, 1.62 ± 0.06 m.

The mean preoperative BMI was 28.0 ± 0.6 kg/m^2. At the time of data gathering, 29 patients presented normal weight (BMI < 25), 42 were overweight (BMI 25–30) and 29 were obese (BMI > 30), as can be seen in greater detail in Table 1. The men's mean preoperative BMI was 28.4 ± 3.6 kg/m^2 and the women's was 27.5 ± 5.0 kg/m^2.

The postoperative analysis showed that there was a tendency toward weight decrease in 36 patients (36%); 15 did not present any weight change (15%), but 49 gained weight (49%). The mean postoperative BMI was 28.3 kg/m^2: 28.9 ± 0.7 kg/m^2 for the men and 27.8 ± 0.7 kg/m^2 for the women. Overall, there was a mean increase in BMI of 0.4.

Table 1 also shows that the BMI tended to increase among patients with normal weight and among overweight patients, but presented a tendency to diminish among obese patients. However, the changes in weight that were observed did not present any statistically significant differences ($p > 0.05$).