



RBO
REVISTA BRASILEIRA DE ORTOPEDIA

www.rbo.org.br



Original Article

Comparative analysis between radiographic views for knee osteoarthritis (bipedal AP versus monopodal AP)[★]

Rodrigo Pires e Albuquerque,^{a,*} Cristina Barbosa,^b Dafne Melquíades,^b Hilton Koch,^c João Maurício Barretto,^d Alexandre Albino and Waldeck Duarte Júnior^e

^aMSc and PhD in Medicine. Attending Physician in the Knee Group, Santa Casa de Misericórdia do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

^bPhysician in the Radiology Service, Santa Casa de Misericórdia do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

^cMSc and PhD in Medicine. Head of the Radiology Service, Santa Casa de Misericórdia do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

^dMSc and PhD in Medicine. Head of the Orthopedics Service, Santa Casa de Misericórdia do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

^ePhysician in the Orthopedics Service, Santa Casa de Misericórdia do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

ARTICLE INFO

Article history:

Received on April 27, 2012

Accepted on June 20, 2012

Keywords:

Knee osteoarthritis

Radiology

Comparative study

A B S T R A C T

Objective: A comparative analysis by applying the criteria of the original classification Ahlbäck in the anteroposterior (AP) bipedal knee in extension and anteroposterior (AP) monopodal knee in symptomatic knee arthrosis. With this analysis we intend to observe the agreement, any advantage or difference between the incidence and degree of joint involvement between the orthopedic surgeons and radiologists with the referring physician. **Methods:** From January 2012 to March 2012, was a prospective study of 60 symptomatic arthrosis knees (60 patients), clinically selected group of outpatient knee and radiographic proposals submitted to the search. Of the 60 patients, 39 were female and 21 male, mean age 64 years (ranging from 50 to 84 years). Of the 60 knees studied, 37 corresponded to the right side and 23 on the left side. Statistical analysis was performed by Kappa statistics, which evaluates the interobserver agreement for qualitative data. **Results:** According to the scale of Ahlbäck, there was a significant agreement ($p < 0.0001$) intra-observer in the classification of knee osteoarthritis among the five evaluators. There was a significant agreement ($p < 0.0001$) with inter-observer referring physician in the incidence of AP monopodal and AP bipedal for the four raters. **Conclusion:** The study found no difference between the incidence in the AP monopodal versus AP bipedal in osteoarthritis of the knee.

© 2013 Sociedade Brasileira de Ortopedia e Traumatologia. Published by Elsevier Editora Ltda. Este é um artigo Open Access sob a licença de [CC BY-NC-ND](https://creativecommons.org/licenses/by-nc-nd/4.0/)

[★]Work performed in the Radiology and Orthopedics Services, Santa Casa da Misericórdia do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

*Corresponding author at: Av. Henrique Dodsworth 83/105, Copacabana, Rio de Janeiro, RJ. CEP: 22061-030

Email: rodalbuquerque@ibest.com.br (R. Pires e Albuquerque).

Análise comparativa entre incidências radiográficas para a osteoartrose do joelho (AP bipodal versus AP monopodal)

R E S U M O

Palavras-chave:

Estudo comparativo
Osteoartrose do joelho
Radiologia

Objetivo: Fazer uma análise comparativa com a aplicação dos critérios da classificação original de Ahlbäck na incidência ântero-posterior (AP) bipodal do joelho em extensão e na incidência ântero-posterior (AP) monopodal do joelho, em joelhos artrósicos sintomáticos. Com esta análise pretendemos observar a concordância, diferença ou as vantagens eventuais entre as incidências e o grau de comprometimento articular entre os médicos ortopedistas e radiologistas com o médico de referência. **Métodos:** De janeiro de 2012 a março de 2012, foi feito um estudo prospectivo, de 60 joelhos artrósicos sintomáticos (60 pacientes), selecionados clinicamente no ambulatório do grupo de joelho e submetidos às incidências radiográficas propostas na pesquisa. Dos 60 pacientes, 39 eram do sexo feminino e 21 do masculino, com média de 64 anos (variando de 50 a 84). Dos 60 joelhos avaliados, 37 correspondiam ao lado direito e 23 ao esquerdo. A análise foi feita pela estatística de Kappa, que avalia a concordância interobservadores de dados de natureza qualitativa. **Resultados:** Segundo a escala de Ahlbäck, houve uma concordância significativa ($p < 0,0001$) intraobservador na classificação da osteoartrose do joelho entre os cinco avaliadores. Houve uma concordância significativa ($p < 0,0001$) interobservador com médico de referência na incidência em AP monopodal e AP bipodal para os quatro avaliadores. **Conclusão:** O estudo não observou diferença entre a incidência em AP bipodal versus o AP monopodal na osteoartrose do joelho.

© 2013 Sociedade Brasileira de Ortopedia e Traumatologia. Publicado pela Elsevier Editora Ltda. Este é um artigo Open Access sob a licença de [CC BY-NC-ND](#)

Introduction

Physical examination and radiological examination are fundamental assessments for patients with knee osteoarthritis. In radiological assessments on knee osteoarthritis, the severity of joint impairment can be graded and the ligament instability or bone loss can be measured. The type of surgery and the implant needed can also be indicated.

Even today, there is no consensus regarding standardization of radiological evaluations on patients with knee osteoarthritis, in the worldwide literature.

The aim of the present study was to conduct a comparative analysis through applying the criteria of the original Ahlbäck classification¹ in bipedal anteroposterior (AP) view of the extended knee and in monopodal AP view of the extended knee, in symptomatic arthrotic knees. Through this analysis, we aimed to observe the concordance, possible advantages or differences between the views, and the degree of joint impairment between the orthopedic surgeons and radiologists and the reference physician.

Materials and methods

From January 2012 to March 2012, a prospective study was conducted on 60 symptomatic arthrotic knees (60 patients), which were selected clinically at the knee outpatient clinic of Santa Casa da Misericórdia do Rio de Janeiro and were examined using the radiographic views proposed for this investigation.

The inclusion criteria for the patients was that they should be over the age of 50 years and present pain in the knee, together with a history and physical examination compatible

with osteoarthritis. The patients needed to have never had previous knee surgery and be free from rheumatic pathological conditions. Among the 60 patients, 39 were female and 21 were male, with a mean age of 64 years (ranging from 50 to 84). We only evaluated the knee that was more painful. Thus, among the 60 knees evaluated, 37 were right and 23 were left knees.

The patients were taken to a preestablished radiological room and the Super 100R x-ray machine (Philips, Brazil) was used, with specifications of 50 kV and 31 mA. The patients were carefully positioned by the physician, aided by a radiology technician. The examination was assessed by the researchers with regard to image quality and was repeated if the technical quality was judged to be poor.

Two radiographic views were produced on each knee:

View 1 (bipedal AP): an anteroposterior radiograph on the extended knee with bipedal weight-bearing. The tube-film distance was one meter, and the x-rays were centered on the lower pole of the patella (Fig. 1).

View 2 (monopodal AP): an anteroposterior radiograph on the extended knee with monopodal weight-bearing. The tube-film distance was one meter, and the x-rays were centered on the lower pole of the patella (Fig. 2).

The criteria of the original Ahlbäck classification were applied to views 1 and 2, separately (Figs. 3 and 4). The joint space was considered to have become reduced in the following situations: when it corresponded to half of the size of the compartment in the contralateral knee, when it corresponded to half of the compartment in the ipsilateral knee, or when it was less than 3 mm. Joint obliteration was defined as absence of space in the compartment evaluated. Bone erosion was characterized as absence of joint space in association with bone wear at this joint.

Download English Version:

<https://daneshyari.com/en/article/2713665>

Download Persian Version:

<https://daneshyari.com/article/2713665>

[Daneshyari.com](https://daneshyari.com)