

ORIGINAL ARTICLE

Tönnis stage 0 and 1 acetabular rim cartilage injuries: Incidence, grade, location and associated pre-surgical factors[☆]



J. Más Martínez^{*}, J. Sanz-Reig, C.M. Verdú Román, D. Bustamante Suárez de Puga, M. Morales Santías, E. Martínez Giménez

Traumatología Vistahermosa, Clínica Vistahermosa, Alicante, Spain

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KEYWORDS

Arthroscopy;
Hip;
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Abstract

Introduction and purpose: Articular cartilage lesions have a direct effect on the success of surgical treatment. The aim of this study was to determine the prevalence rate, location, grade, and factors associated with acetabular rim articular cartilage lesions in patients undergoing hip arthroscopy.

Material and methods: A prospective study was conducted by analysing the intraoperative data of 152 hips in 122 patients treated with hip arthroscopy for femoroacetabular impingement from January 2011 to May 2016. The prevalence rate, location, and grade were calculated, as well as the pre-operative factors associated with acetabular rim articular cartilage lesions.

Results: The mean age of the patients was 38.6 years. The Tönnis grade was 0 in 103 hips, and 1 in 52 hips. Acetabular rim articular cartilage lesions were present in 109 (70.3%) hips. The location of the lesions was superior-anterior. Independent risk factors for the presence of acetabular rim articular cartilage lesions were an alpha-angle equal or greater than 55°, duration of symptoms equal or greater than 20 months, and Tegner activity scale level equal or greater than 6.

Discussion: Although patients were classified as Tönnis grade 0 and 1, and 3 T MRI reported acetabular lesions in 1.3% of cases, there was a high frequency of acetabular rim cartilage

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^{*} Corresponding author.

E-mail address: Jmas@traumavist.com (J. Más Martínez).

PALABRAS CLAVE

Artroscopia;
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lesions. Knowledge of the independent risk factors associated with acetabular rim articular cartilage lesions may assist the orthopaedic surgeon with the decision to perform hip arthroscopy. © 2017 SECOT. Published by Elsevier España, S.L.U. All rights reserved.

Lesión cartilaginosa del reborde acetabular en estadios Tönnis 0 y 1: incidencia, grado, localización y factores preoperatorios asociados

Resumen

Introducción y objetivo: La presencia de lesión cartilaginosa condiciona en gran medida el resultado funcional de cualquier articulación tras el tratamiento quirúrgico. Nuestro objetivo fue determinar la prevalencia, localización, grado y factores preoperatorios asociados a la lesión cartilaginosa del reborde acetabular en pacientes intervenidos mediante cirugía artroscópica de cadera.

Material y métodos: Estudio prospectivo de los hallazgos intraoperatorios en 152 caderas de 122 pacientes consecutivos intervenidos mediante cirugía artroscópica de cadera por choque femoroacetabular entre enero de 2011 y mayo de 2016. Se determinó la prevalencia, localización, grado, y factores preoperatorios asociados a la lesión cartilaginosa del reborde acetabular.

Resultados: La edad media de los pacientes fue de 36,8 años. El grado de degeneración articular era Tönnis 0 en 103 caderas y Tönnis 1 en 52 caderas. En 109 caderas (70,3%) se detectó lesión cartilaginosa del reborde acetabular. La localización de las lesiones fue superior y anterior. El análisis estadístico estableció como factores preoperatorios independientes para la presencia de lesión cartilaginosa del reborde acetabular un ángulo alfa igual o mayor de 55°, un tiempo de evolución de los síntomas hasta la artroscopia igual o mayor de 20 meses, y un nivel de actividad física en la escala de Tegner igual o mayor de 6.

Discusión: A pesar de que los pacientes se clasificaron como Tönnis 0 y 1, y que la resonancia nuclear magnética de 3 tesla informó de la presencia de lesión cartilaginosa en el 1,3% de los casos, existía una alta frecuencia de lesiones cartilaginosas del reborde acetabular. El conocimiento de los factores predictores preoperatorios asociados a la lesión cartilaginosa del reborde acetabular puede ayudar al cirujano ortopédico sobre la indicación de la cirugía artroscópica de cadera.

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Introduction

Cartilage lesions greatly influence the functional outcome of any joint, since they rarely heal spontaneously, regardless of whether they are acute or chronic.^{1,2} In the hip, an articular cartilage lesion at chondrolabral level is considered an initial part of early coxofemoral joint degeneration. And if it progress to a full thickness lesion with exposed bone, the cartilage lesion will increase in size and result in articular degeneration.³

Magnetic resonance imaging (MRI) is the test of choice to determine changes in the hip at intra-articular level.^{4,5} However, its sensitivity and specificity is low for diagnosing chondral lesions, even when using 3 T MRI scanners. Therefore, other techniques are recommended with increased diagnostic precision, such as MR arthrography or MIR with traction.^{6,7} And some authors consider arthroscopic hip surgery (AHS) the benchmark technique for detecting acetabular cartilage lesions.⁸

The main objective of our work was to study the frequency, location, grade and preoperative factors associated

with the presence of an acetabular rim cartilage lesion in a single series of Tönnis stage 0 and 1 patients operated using AHS.

Material and methods

A study was performed from our prospective database of patients who underwent AHS during the period between January 2011 and May 2016. The patients that met the following inclusion criteria were selected: aged less than 50 years, diagnosis of femoroacetabular impingement (FAI), and Tönnis grade 0–1. Patients with hip dysplasia determined by a centre-edge angle of less than 25°, Legg-Calve-Perthes disease, previous hip surgery, avascular necrosis, and aged less than 18 years, were excluded from the study.

All the patients gave their informed consent for inclusion in the study, and the study was approved by our institution's Clinical Research Ethics Committee (CREC).

The modified Harris hip score (mHHS)⁹ was used for the preoperative clinical assessment, hip assessment

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