

Short Communication

Knee Examination for Meniscus Injury, is it Necessary Magnetic Resonance for the Diagnosis? A Systematic Review

Benigno Zenteno*

Department of Evidence-Based Medicine, Universidad de Durango, Mexico

*Corresponding author

Benigno Zenteno, Department of Evidence-Based Medicine, Universidad de Durango, Montes Americanos 8107, Cumbres V, Chihuahua, Chih. Mexico CP 31216, Email: zenteor@hotmail.com

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Abstract

Nowadays, one of the main orthopedic diagnostic problems is the referral of the Patient to other physicians that do not examine the injured individuals themselves.

INTRODUCTION

The Orthopedic surgeon sometimes trusts in imaging studies that lack the precision that the patient requires for an objective therapeutic decision, even with high quality equipment and the report of experienced radiologists [1-5].

Objective and hypothesis

To offer the medical community a clinical guide, with high standards of scientific evidence, trustworthy and practical, in order to do a correct patient diagnosis, with high sensitivity and specificity, without mainly relying on imaging studies, having as a main resource a thorough physical examination, so it can have the same or more certainty as a magnetic resonance [4,6-10].

MATERIALS AND METHODS

A systematic review of papers on meniscus injury knee was made in The National Library of Medicine, *Entrez PubMed*, *Cochrane* and *Bandolier*, using key words: meniscus diagnosis, meniscal injury knee, knee injuries/diagnosis, menisci tibia/injuries, menisci tibia/pathology and meniscal examination.

Inclusion criteria: studies that relates clinical examination with imaging studies and their arthroscopic confirmation in surgery as "gold standard" in menisci injury. (Written either in English or Spanish and published no more than ten years ago)

Exclusion Criteria: Works that were excluded lacked an arthroscopic corroboration as our "gold standard" in menisci injury, or articles that were written either in languages other than English or Spanish or those with more than ten years published.

The studies included were classified according to evidence levels registered at AAOS [11].

This paper will be concluded with a medical guide, (Figure 1). This guidance will allow physicians to follow Semiology of the

patient's physical exploration and interrogatory in order to reach a correct and precise diagnosis.

RESULTS

The results were comparable, or better than, those obtained by imaging studies as used nowadays.

Practical Clinical Guide**Medical History:**

Mechanisms of menisci injury:

- It has been found that doing sit-ups is reported as an underlying cause for Menisci pathology [12].



Figure 1 Childress sign.

Table 1: Meniscal injuries (EBM) diagnosis.

MENISCAL INJURIES (EBM) DIAGNOSIS.
• HISTORY:
- PAIN IN THE MEDIAL OR LATERAL JOINT LINES.
#NAME?
-INCREASE OF INTRA-ARTICULAR FLUID.
-DEFICIENT FINAL EXTENSION OF KNEE.
-MECANICAL BLOCKADE.
- LATERAL CREPITATION IN THE KNEE.
EXAMINATION
-HIDRARTROSIS.
-PAIN AT THE JONTS LINES AT DIGITAL PRESSURE.
-LOST OF EXTENSION OF FINAL DEGREES OF THE KNEE.
- MC MURRAY SIGN:POSITIVE, INCLUDING PARADOXICAL
- EGE SIGN: POSITIVE
- CHILDRESS SIGN: POSTIVE
- STEINMANN SIGN: POSTIVE
- LATERAL CREPITUS
ADD: TWO or more positive signs increase the certainty of the diagnosis.

Symptoms and Signs

- Pain experimented in joint lines (medial or lateral) points to the injury region in menisci. [1,4,6,7,9,10,12-16].
- - The same data can be obtained if one finds mechanical "catching" in the medial or lateral joint lines [12,13]. The same conclusions can be obtained by finding inflammation in medial or lateral areas or an increase in volume in the joint [2,13].
- The same can be said if one finds partial functional blockade in the joint [12]
- lateral clicking sometimes without pain is caused by a posterosuperiorpoplíteo-meniscal lesion [17]
- Another important injury sign is difficult to reach full joint extension [9].

Clinical Examination

- Signs with more specificity are the ones found with the manouvres of Steinmann, Mc Murray and Childress (Figure) [6,9,10,18,19].
- Mc Murrays sign has also demonstrated a sensitivity of 83.3% in comparison to 75% of magnetic resonance [8,10]. However, the best positive predictive sign is the one found in Ege' test [8].
- Mc Murray signs called "paradoxical" are compatible with high specificity
- In injuries with displaced "long bucket handle tears" and with radial injury of the posterior part of a discoid lateral meniscus[20]
- The use of 2 tests of clinical exploration can raise the

exploration sensitivity and a probability up to 97.14% [17,18]

DISCUSSION

Most published studies dealing with menisci injury have publication bias tending to convince the reader to necessarily engage in sophisticated and costly imaging studies [20]

There are some studies that demonstrate the healing of some menisci injury after performing an arthroscopy; this has been done, after being diagnosed previously, by radiology with magnetic resonance. Therefore, they don't justify the use of that particular study in all patients [23].

An acute exploration and a direct interrogatory are enough for a correct diagnosis of a menisci injury in most patients, applying medicine based on evidence [1-4,6,7,10,14,15,19,22].

It is suggested that the use of two or more clinical tests, in order to raise sensitivity and specificity in the diagnosis, and also the predictive data [4,6,8,10,15,21,22].

References 15 y 22 are Level 1, Number 8, 8, 10, 11, 12, 16, 17, 20 y 23, Level II. Numbers 3, 5, 6, 14, 18, 19, y 21 Level III. And 2, 4, 7, 13, are Level IV.

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