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Bucket-Handle Tear of Knee Meniscus: Know It to Repair It

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Abstract **Case Report**

Bucket-handle meniscal tears are meniscus lesions with an attached tear fragment displaced. Magnetic resonance imaging (MRI) is considered as one of the best imaging techniques in diagnosing bucket-handle tears, with high degrees of both sensitivity and specificity. We report a case of a bucket-handle tear presenting as a double longitudinal tear of the medial meniscus and we describe the other possible signs in MRI to help traumatologists better understand the lesion to be better treated.

Keywords: Bucket-handle tear, meniscus, MRI.

INTRODUCTION

Bucket-handle meniscal tear, one of the unstable meniscal lesions, is defined as lesion parallel to the axial edge of the meniscus and sitting in the middle of the meniscus. It is preferential for the medial meniscus.

Magnetic resonance imaging (MRI) is considered as one of the best imaging techniques in diagnosing bucket-handle tears, with high degrees of both sensitivity and specificity, using a number of specific signs Well-known and widely used.

Their knowledge is important to the traumatologists in order to treat the lesion and prevent its arthrogenic evolution.

CASE REPORT

A 32-year-old patient, without history, presents at a distance from indeterminate knee trauma, persistent pain and bending crunch with two bending blocking episodes.

MRI performed showed an aspect of double posterior cruciate ligament (PCL) (fig 1) and disappearance of the normal aspect of the posterior horn of the internal meniscus (fig 2).

Fig-1: aspect of double posterior cruciate ligament

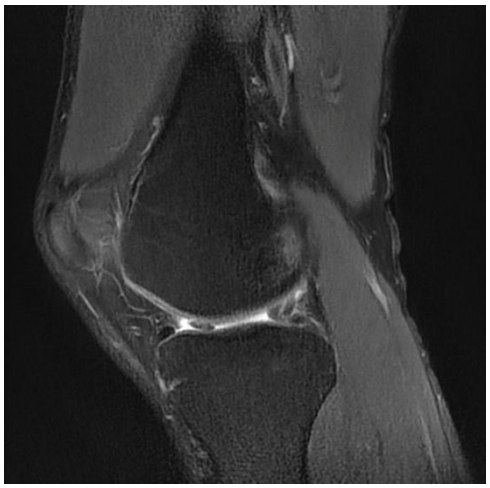

Fig-2: disappearance of the normal aspect of the posterior horn of the internal meniscus

DISCUSSION

Bucket-handle meniscal tear, one of the unstable meniscal lesions, is defined as a lesion parallel to the axial edge of the meniscus and sitting in the middle of the meniscus. It is preferentially involved in the medial meniscus. Its spontaneous repair is impossible with a high potential for arthritis. Where its detection is a real diagnostic issue [1].

Two forms are described in arthroscopy: a strip of tissue with possible dislocation in the intercondylar indentation or a permanently dislocated strip [2].

MRI allows the positive diagnosis of Bucket-handle meniscal tear with sensitivity from 64% to 93% [3, 4], which is lower than sensitivity of other meniscal lesions [3,4].

The MRI interpretation looks for several signs according to the section plans studied

- Double posterior cruciate ligament (PCL) sign: on sagittal section that has specificity close to 100% [5].
- Fragment within the intercondylar notch sign: image in continuity of the posterior to anterior horn on the coronal sections corresponding to a fragment in the intercondylar notch [6].
- Double anterior horn sign: juxtaposition of the anterior segment and the displaced meniscal fragment visualized in sagittal section [7].
- The sign of the snake: visualization of a band in sagittal section going from the posterior horn to the anterior horn, but not placing under the LCP.
- The absence of the "bow tie sign": disappearance on the sagittal cuts of the normal aspect of the meniscus like a black bow tie [8]
- Disproportional thickening of the posterior horn: appears on the sagittal section, meniscus is thicker in its central part than in its peripheral part testifying to a fragmentary meniscal displacement [4].

MRI poses the positive diagnosis, assesses the possibility of repair by evaluating the longitudinal lesion extension and its topography and evaluated quality of the strip tissue [9].

CONCLUSION

Bucket-handle meniscal tear is an unstable lesion whose repair is imperative, his detection is mainly based on MRI despite a relatively low sensitivity whence is necessary to know the various signs to guide the management.

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