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The Knee xxx (2018) xxx-xxx



Contents lists available at ScienceDirect

### The Knee



# National consensus on the definition, investigation, and classification of meniscal lesions of the knee

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#### ARTICLE INFO

Article history: Received 22 March 2018 Received in revised form 15 May 2018 Accepted 4 June 2018 Available online xxxx

Keywords: Knee Meniscus Meniscal Consensus Patient selection Meniscectomy

#### ABSTRACT

*Background:* The aim of this study was to deliver standardised terminology for the identification and stratification of patients with meniscal lesions of the knee.

*Methods:* A national group of expert surgeons was convened by the British Association for Surgery of the Knee (BASK) and a formal consensus process was undertaken following a validated methodology. A combination of nominal group techniques and an iterative Delphi process was used to develop and refine relevant definitions. Where appropriate, definitions were placed into categories to facilitate use in clinical practice and guideline development.

*Results:* A degenerative meniscus develops progressively with degradation of meniscal tissue and this may be revealed by intra-meniscal high signal on magnetic resonance imaging (MRI). A meniscal tear was defined as a defect or split in the meniscocapsular complex, which can occur in a degenerative or non-degenerative meniscus. Degenerative meniscal lesions (high signal or tear) are frequent in the general population and are often incidental findings on knee MRI. Symptoms were defined and classified into three groups: (1) strongly suggestive of a treatable meniscal lesion, (2) potentially suggestive of a treatable meniscal lesion, (3) osteoarthritic. A strategy for radiological imaging (radiograph  $\pm$  MRI) was agreed for the investigation of the patients with a possible meniscal tear. Meniscal lesions and tear patterns on MRI imaging were defined and classified with reference to potential treatability: (1) target, (2) possible target, (3) no target.

*Conclusions:* The agreed terminology will enable patients with meniscal lesions to be identified and stratified consistently in clinical practice, research and guideline development.

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#### 1. Introduction

Patients with meniscal pathology are a heterogeneous population with a widely variable pattern of symptoms and radiological features [1]. More than one third of people over the age of 50 without any radiographic evidence of osteoarthritis have meniscal pathology detectable on magnetic resonance imaging (MRI), rising to over 70% for individuals with osteoarthritis [2]. Many meniscal lesions are asymptomatic and pain and other symptoms in the knee can often be attributed to other pathology, especially osteoarthritis [2–5].

When a meniscal 'tear' is considered the cause of symptoms, surgical treatment to excise the unstable meniscal tissue is frequently recommended and this procedure, arthroscopic partial meniscectomy (APM), has become the most commonly performed orthopaedic procedure worldwide [6,7]. Recently, following the publication of several randomised controlled clinical trials, there has been debate about the effectiveness of this procedure [8–13]. Interpretation of the evidence has, however, been hampered by inconsistent and broad inclusion criteria, with specialists arguing that the patients selected would not be considered eligible for surgery in contemporary practice [10,14,15].

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<sup>1</sup> See the Appendix A section.

https://doi.org/10.1016/j.knee.2018.06.001 0968-0160/© 2018 Published by Elsevier B.V.

Please cite this article as: Abram SGF, et al, National consensus on the definition, investigation, and classification of meniscal lesions of the knee, Knee (2018), https://doi.org/10.1016/j.knee.2018.06.001

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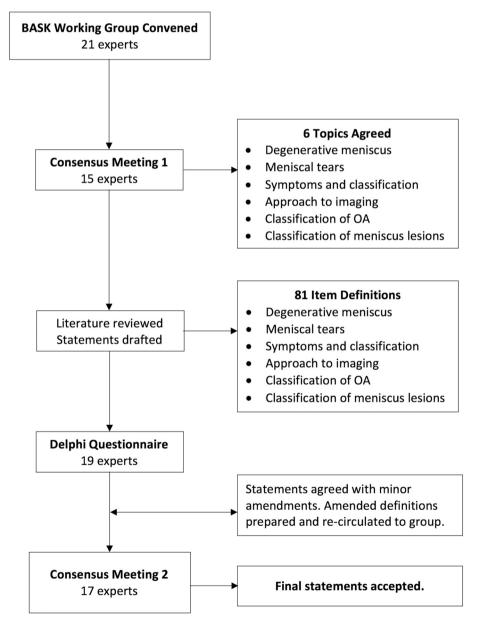
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The pattern of symptoms is thought to be critical to the identification of patients with a meniscal origin for their knee pain, with the importance of corresponding 'mechanical' symptoms being particularly frequently highlighted [10,12,16–20]. Despite this, no definition for these symptoms has been agreed [14]. Furthermore, given that many meniscal tears are asymptomatic, the importance of the anatomical pattern of meniscal tear and the presence or absence of radiographic osteoarthritis has also been highlighted [21,22]. Certain patterns of meniscal tear are thought to be more likely to cause symptoms due to their mechanical 'instability' and some attempts have previously been made to classify the radiological appearances of such meniscal lesions [21,23,24]. There is a clear need for consensus on these terms and definitions for all the selection factors that are considered important in identifying candidates for surgical or non-surgical treatment of patients with knee pain and meniscal pathology [12]. The aim of this project was to deliver the required standardised terminology by expert consensus, to facilitate consistent iden-

tification, description, and comparison of patients with meniscal pathology in clinical practice and research.

#### 2. Methods

A combination of validated nominal group techniques and the Delphi process was applied, in accordance with the development of consensus statements published by other groups [25–29]. An overview of the process is summarised in Figure 1. In





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