

Early osteoarthritis

Elizaveta Kon · Giuseppe Filardo · Maurilio Marcacci

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Everybody knows what osteoarthritis (OA) is and how to manage it. Everybody knows (or thinks to know) what a cartilage defect is and continues to discuss how to treat it. But there is a “no man’s land” in between, where surgeons prefer not to go: patients where cartilage repair is “not enough”, but prosthetic solution is “too much”; something like “wait till you are bad enough/old enough for a total/uni knee replacement”....

In reality, a lot of people are willing to conquer this no man’s land: on the one hand cartilage surgeons (and don’t forget about industry, please) advancing: “we will make our implant bigger!”, and on the other hand prosthetic people proposing: “we will make our implant smaller!” But it’s not just a matter of size ... rather, treatments should be targeted according to the proper disease and disease phase.

Until now, despite the growing interest in this category of patients and new fashionable treatments continuously coming up, still, nobody can clearly define where this “shadow zone” of early OA begins and ends. And once we know, what should we do?

There is an increasing awareness on the importance in identifying early phases of the degenerative processes, when there might still be some regenerative ability of cartilage, which is permanently lost in the advanced stages of the disease. Nonetheless, surprisingly the definition of OA has not changed since 1986 to capture OA and certainly early OA [1].

The diagnosis of early knee OA is more complicated than already established OA, where clear signs can be

detected simply through radiographs and more defined history, signs, and symptoms [1]. In this early phase, signs and symptoms may still be limited and sporadic, only becoming manifest under certain conditions such as after long-term loading. Moreover, even though early OA is thought to display a number of tissue-related phenomena leading to the loss of knee homeostasis and in most cases to established OA [2, 3], such structural changes are not detectable by radiographic evaluation [1]. Other than arthroscopy, which is seldom used as a pure diagnostic tool, new imaging techniques improving in quality over the last years, in particular MRI, may detect the spectrum of joint tissue changes to identify the pathological tissues and the loss of joint homeostasis. With MRI available in the daily clinical practice, early OA phase should be possible to define in the majority of patients.

In view of the increasing knowledge on joint pathophysiology and the availability of diagnostic tools, a consensus of experts of different fields (orthopedics, rheumatology, biology, sports medicine, and rehabilitation) has been assembled in an ESSKA Cartilage Committee Consensus Meeting held in Bologna at the Rizzoli Orthopaedic Institute in March 2011, aiming to define “early OA”. For the first time, arthroscopic exam and MRI findings have been taken into account, together with X-ray and clinical evaluation [1].

A clear definition of the early OA phase is important from two points of view: it could allow one to identify patients before advanced degenerative phases, which definitely contraindicates the current regenerative treatments, but it would also identify patients at risk for progression, thus allowing one to better assess the potential of the available procedures and patients who may better benefit from their use. In fact, despite the literature showing overall promising findings of novel approaches, the clinical

E. Kon (✉) · G. Filardo · M. Marcacci
Biomechanics Laboratory—III Clinic, Rizzoli Orthopedic
Institute, Via Di Barbiano, 1/10, 40136 Bologna, Italy
e-mail: e.kon@biomec.ior.it

outcome appears often rather unpredictable [4, 5]. The recruitment of heterogeneous study populations can be considered among the main factors, since the final outcome can be markedly influenced not only by the treatments applied, but also by the patients' profiles. So the group of experts during the ESSKA Consensus Meeting tried not only to define early OA, but also to determine the existing evidence on its management. This challenge led to a series of 6 reviews focusing respectively on: definition and classification [1], biological aspects [3], biomechanical predictors [2], non-surgical management of early OA [5], and surgical treatments, describing both surgical cartilage treatments [4] as well as concurrent procedures [6] of critical importance to provide a normalized biomechanical environment.

We are aware that new insights and technologies will most probably determine a further evolution in the definition and treatment of early OA. However, we hope that the effort of the ESSKA Cartilage Committee in firstly defining early OA and the potential of the available therapeutic options may lead to an improvement in the current treatment algorithm in a specific, but big part of the patient population. In fact, the definition of clear classification criteria will help to better design trials for the assessment of potential and indications of the available and new emerging treatments, and therefore better manage patients affected by lesions of the knee articular surface in the clinical practice.

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