The Twelve Segment Matrix a New Documentation System for Medial Meniscal Pathology

Spelitz D.¹, Kröpfl A.², Sega W.², Syre G.⁴, Fischmeister M.²

¹) Krankenhaus Rummelsberg, Orthopädisch Unfallchirurgische Klinik Wichernhaus Rummelsberg 71, 90592 Schwarzenbruck Germany
²) Unfallkrankenhaus der Allgemeinen Unfallversicherungsanstalt, Garnisonstrasse 7, 4020 Linz, Austria
³) Department of Pathology, Aö. Krankenhaus der Barmh. Schwestern, Seilerstätte 4, 4020 Linz, Austria
⁴) Department of Pathology, AKH Linz, Krankenhausstr. 9, 4020 Linz, Austria

When you can measure what you are speaking about, and can express it in numbers, you know something about it. But when you cannot measure it, and cannot express it in numbers, your knowledge is of a meager kind.

Lord Kelvin

Clinical Relevance

The twelve segment matrix of documentation provides important information and we recommend its use.

Results

In a prospective series of fifty cases parts of this system have been applied. Four patients had complete loss of integrity between segments A and B; one displayed complete loss of segments between B and C. Partial loss of peripheral rim integrity was observed between sub-segments A3:B3 in one patient and between B3:C3 in twelve patients.

From four pathophysiological models

the instability model, the peripheral rim model, the shear stress model and the plastic deformity model a twelve segment matrix has been developed.

Documentation

1. Separations between subsegments are documented individually and as sum.
2. Subsegments are documented as N Normal, S Soft and degenerate, H Hyperplastic (pillow ore bulb formation)
3. Resected menisci are documented as percentage of remaining meniscal tissue.

Example

Left knee: Tear of the posterior horn in a medial meniscus

S = C1,B1, H = C3, Resected = 3/12

The tears can be assigned a number, which can be used in statistic models and models of medical decision making.

References