

COMMENTARY TO HABILITATION THESIS¹

Commentary

Magnetic resonance imaging of hyaline cartilage takes currently the front seat in determining articular cartilage lesions and plays a new vital role in musculoskeletal diagnostics. This reflects a concurrence of several factors, including active lifestyles of the population, new methods of surgical treatment, and new technological advanced MRI sequences.-The optimal MRI protocol with assessment of articular cartilage should be an essential part of any MR examination. The development of new imaging techniques is enabling the launch of a number of projects and studies dealing not only with morphological but also biochemical depiction of cartilage. Advanced imaging techniques for hyaline cartilage can be used in detecting early arthritic changes, examining the composition of tissue replacing damaged cartilage, and monitoring changes through time in repaired tissue. The author of the habilitation thesis presents a summary of possible ways for imaging hyaline cartilage using MRI, including advanced techniques mentioned in the stated review articles. Within the thesis, the author presents her own experience with dGEMRIC sequence. dGEMRIC was used as a method for monitoring cartilage quality and biochemical changes in hyaline cartilage of knee joint after two different types of treatment and this study shows that dGEMRIC is a very suitable tool for detecting qualitative changes in cartilage.

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[1]² Otaševič T, Šprláková-Puková A. Současné možnosti diagnostiky a léčby ohraničených chrupavčitých lézí nosných kloubů. Prakt. Lék. 2020; 100(3): 107–112

¹ The commentary must correspond to standard expectations in the field and must include a brief characteristic of the investigated matter, objectives of the work, employed methodologies, obtained results and, in case of co-authored works, a passage characterising the applicant's contribution in terms of both quality and content.

² Bibliographic record of a published scientific result, which is part of the habilitation thesis.

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
20	10	40	-

[2] Šprlakova-Pukova, A., Vališ, P., Mechl, M. Magnetic resonance imaging of hyaline cartilage [Zobrazování hyalinní chrupavky pomocí magnetické rezonance] (2017) Ceska Radiologie, 71 (4), pp. 291-295.

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
30	-	80	-

[3] Šprláková-Puková A., Vališ, P., Repko, M. Current options and importance of imaging of the hyaline articular cartilage of the knee prior to the surgery - A different perspective of an orthopaedic surgeon and a radiologist [Současné možnosti a význam zobrazování hyalinní chrupavky kolenního kloubu před operačním zákrokem - Rozdílný pohled ortopeda a radiologa] (2018) Acta Chirurgiae Orthopaedicae et Traumatologiae Cechoslovaca, 85 (5), pp. 366-369

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
30	15	60	-

[4] Štouračová A, Mechl M, Šprláková-Puková A, Schwarz D, Burda J. Diagnostic imaging of articular cartilage including volumetric measurements [Možnosti zobrazení artikulární chrupavky včetně volumetrických měření] (2011) Ceska Radiologie, 65 (1), pp. 61-69

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
20	-	10	-

[5] Šprláková-Puková A., Koriťáková E, Štouračová A, Repko M, Vališ P, Otaševič T, Tintěra J. Využití dGEMRIC techniky při zobrazení chrupavky, srovnání výsledků s použitím kontrastní látky Gd-DTPA²⁻ (Magnevist) a Gd-DOTA⁻ (Dotarem) (2020) Ceska Radiologie, 74(3), pp.196-201

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
70	50	70	70

[6] Komárek, J., Vališ, P., Repko, M., Chaloupka, R., Krbec, M., Šprláková, A., Pavlovský, Z., Kubešová, B. Treatment of deep cartilage defects of the knee with autologous chondrocyte transplantation: Long-term results [Léčba osteochondrálních defektu kolenního kloubu metodou implantace solidního chondrograftu - dlouhodobé výsledky] (2010) Acta Chirurgiae Orthopaedicae et Traumatologiae Cechoslovaca, 77 (4), pp. 291-295.

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
20	-	20	-

[7] Otaševič T, Vališ P, Rouchal M, Novák J, Repko M, Šprláková-Puková A. Two-Year Results of Modified AMIC Technique for Treatment of Cartilage Defects of the Knee .Acta Chir Orthop Traumatol Cech. 87, 2020, No. 3 p. 75–81

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
40	20	30	40

[8] Šprláková-Puková A., Štouračová A, Vališ P, Repko M, Korit'áková E, Tintěra J, Otaševič T. Reliability of the Evaluation of MRI Examinations after the Treatment of Chondral Defects in the Knee Joint. Acta Chir Orthop Traumatol Cech. 87, 2020, No. 4 p. 267–274

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
50	50	70	50