

The role of DWI sequences in preclinical investigations of the sacroiliac joints anomalies in patients with Crohn's disease. Our experience

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Learning objectives

The purpose of this study is to establish the role to confer to diffusion weighted sequences (DWI) in the detection of early stage of sacroileitis in patients with Crohn's Disease (CD).

Background

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DWI sequences, useful to recognize the inflammatory component of the wall and to get "qualitative" informations about the state of the disease, may also play a role to identify the possible pathological involvement of the sacro-iliac joints in pre-clinical phase.

Images for this section:

Fig. 1: Initial signs of sacroiliitis in a patient with MC - fibrotic substenotic pattern evaluation STIR coronal .

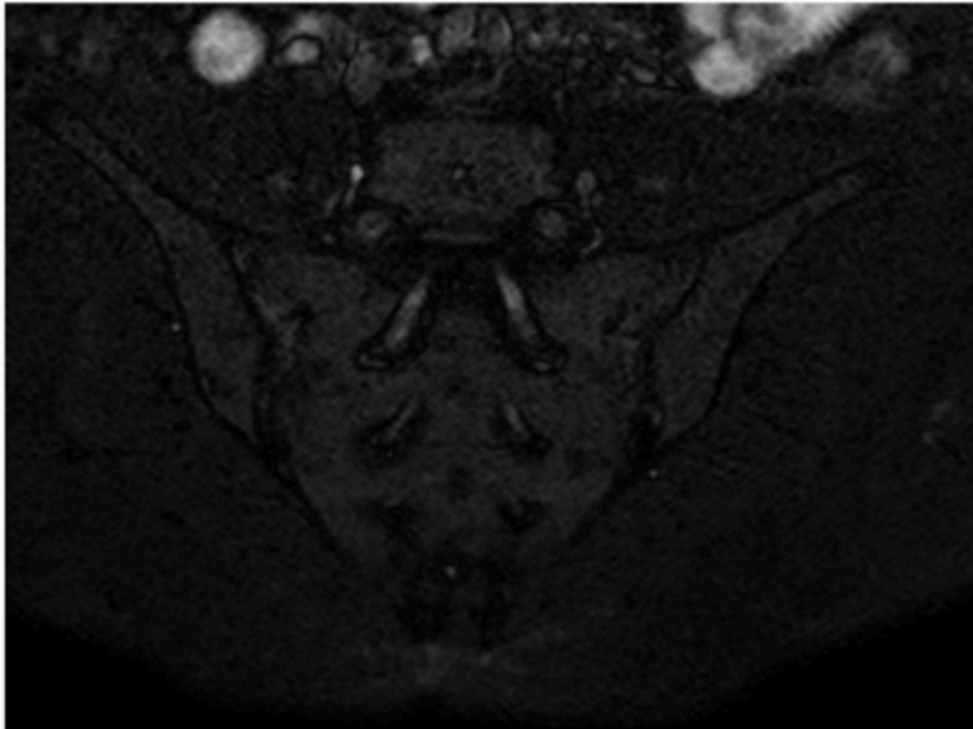


Fig. 1: Initial signs of sacroiliitis in a patient with MC - fibrotic substenotic pattern evaluation STIR coronal .

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Findings and procedure details

A slag free diet was followed by the patients during the three days before the examination; meantime, the previous day, a cathartic preparation, meaning the assumption of 4000 ml of water solution of polyethylene, was performed, in order to remove faecal rests and to simplify the progression of the oral contrast agent.

All patients with a positive histological data of CD were analyzed through colonoscopy.

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The examination took approximately 40 minutes, being able to confirm the specifically targeted sequences acquisition, during the ENTERO - RM, do not necessarily mean any increase of the duration of the whole examination.

Conclusion

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Our experience suggests that DWI integration and ADC mapping, performed during ENTERO MRI study, in patients analyzed to follow up CD, provide important additional informations for the sacroileitis diagnosis, being able to explain any change in early stage of pathology.

Images for this section:



Fig. 2: Evaluation of the ADC maps in a patient with MC - fistulizing pattern inflammatory and inflammatory signs of alteration of the sacroiliac joints , particularly on the right side .

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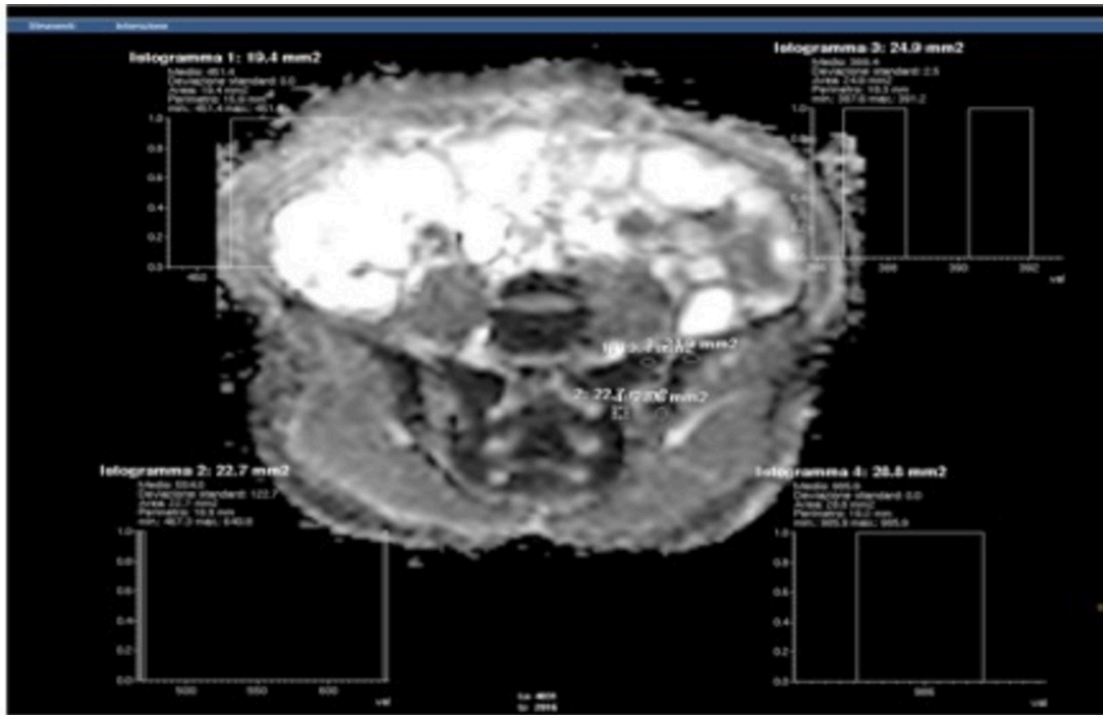


Fig. 3: Evaluation of the ADC maps in a patient with MC to pattern - fibrotic and stenotic initial signs of inflammatory alteration of the sacroiliac joints , particularly on the left side.

Fig. 3: Evaluation of the ADC maps in a patient with MC to pattern - fibrotic and stenotic initial signs of inflammatory alteration of the sacroiliac joints , particularly on the left side.

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Personal information

References

1. Kasper D, Fauci A, Longo D, Braunwald E, Hauser S, Jameson J (2005). Harrison's Principi di Medicina Interna. McGraw Hill (2005); 2003-2016; 2244-2248.
2. Sheila L. Arvikar, Mark C. Fisher (2011); Inflammatory bowel disease associated arthropathy. *Curr rev Muscoloskelet Med* (2011); 4: 123-131.
3. John R. Leyendecker, Richard S. Bloomfeld, David J. DiSantis, Gregory S. Waters, Ryan Mott, Robert E. Bechtold; MR enterography in the management of patients with Crohn disease. *Radiographics*, volume 29, n. 6 (2009).
4. Matthew L Stoll, Ashish S Patel, Marilyn Punaro, Molly Dempsey-Robertson (2012); MR enterography to evaluate sub-clinical intestinal inflammation in children with spondyloarthritis. *Pediatric Rheumatology* 2012; 10:6.
5. Crohn BB, Ginzburg L, Oppenheimer GD (1932) Regional ileitis. A pathologic and clinical entity. *JAMA* 99: 132 3-9
6. Gore RM, Levine MS et al (2000) Textbook of gastrointestinal radiology. 2nd ed. Philadelphia, Pa: Saunders; 726-745.
7. Goebell H, Wienbeck M, Schomerus H et al (1990) Evaluation of the Crohn's Disease Activity Index (CDAI) and the Dutch Index for severity and activity of Crohn's disease. An analysis of the data from the European Cooperative Crohn's Disease Study. *Med Klin* 85: 573-576.
8. Wills JS, Lobis IF, Denstman FJ (1997) Crohn disease: state of the art. *Radiology* 202: 597-610.
9. Walsh DW, Bender GN, Timmons JH (1998) Comparison of Computed Tomography-Enteroclysis and traditional Computed Tomography in the setting of suspected partial small bowel obstruction. *Emerg Radiol* 5: 29-37.
10. Minordi LM, Vecchioli A, Poloni G, Bonomo L (2007) CT enteroclysis: multidetector technique (MDCT) versus single-detector technique (SDCT) in patients with suspected small-bowel Crohn's disease. *Radiol Med* 112: 1188-1200.
11. Pupillo VA, Di Cesare E, Frieri G et al (2007). Assessment of inflammatory activity in Crohn's disease by means of dynamic contrast-enhanced MRI. *Radiol Med* 112: 798-809.
12. Papanikolaou N., Grammatikakis J., Gourtsoyiannis (2004) Crohn's disease mesenteric lymphadenopathy with MR enteroclysis. *ESAGR* 2004: P-090.
13. Horsthuis K., Stoker J. (2004) MRI-findings in patients with perianal Crohn's disease. *ESGAR* 2004: P-011.
14. Kaplan, Helms, Dussault, Anderson, Major; *Risonanza Magnetica dell'apparato locomotore*; Verduci Ed.; 326-328.

15. Società Italiana di Reumatologia. Classificazione delle malattie reumatiche SIR. *Reumatismo* 1999;51:4-12.
16. Taccari E, Spadaro A.; Reumatologia. In: Negri M, ed. *Recentia in Medicina. Progressi II. Fisiopatologia e clinica diagnostica - Farmacoterapia*. Torino: UTET 2005: 913-43
17. Bozgeyik Z, Ozgocmen S, Kokacoc E; Role of Diffusion-Weighted MRI in the detection of Early Active Sacroileitis. *AJR*2008; 191; 980-989.
18. Colagrande S., Pallotta S., Vanzulli A., Napolitano M., Villari N. (2005) il parametro <<Diffusione>> in Risonanza Magnetica: elementi di fisica, tecnica e semeiotica. *Radiol Med* 109: 1-16.
19. Colagrande S., Carbone S.F., Carusi L.M., Cova M., Villari N. (2006) Il parametro "diffusione" in risonanza magnetica: le applicazioni in ambito extra-neurologico. *Radiol Med* 111: 392-419.
20. Oto A., Zhu F., Kulkarni K., Karzmar G., Turner J., Rubin D. (2009) Evaluation of Diffusion-weighted MR Imaging for Detection of Bowel Inflammation in Patients with Crohn's disease. *Acad Radiol* 16(5): 597-603.
21. Brogna L., Gigante P., Papi C., Ferrari R., Gili L., Capurso L., Castrucci M. (2003) Enteroclisi con Risonanza Magnetica (ERM) nella malattia di Crohn. *Radiol Med* 106: 28-35.
22. Baur A, Dietrich O, Reiser M; Diffusion weighted imaging of bone marrow: current status. *European Radiology* (2003); 13: 1699-1708.
23. Ward R, Caruthers S, Yablon C, Blake M, DiMasi M, Eustace S: Analysis of diffusion changes in posttraumatic bone marrow using navigator-corrected diffusion gradients. *AJR* (2000); 174; 731-734.
24. Baur A, Stabler A, Brunig R et al: Diffusion weighted MRI of bone marrow; differentiation of benign versus pathologic compression fractures. *Radiology* (1998); 207: 349-356.