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Contribution of pelvic MRI in the diagnosis and management of Ano-perineal Crohn's disease.

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Abstract

Anoperineal lesions (APL) in Crohn's disease (CD) are frequent, inaugural in 5-30% of cases, often complex, recurrent and difficult to treat. Their appearance represents an important phase in the evolution of Crohn's disease (CD), as they have a major impact on continence, sexuality and quality of life. The presence of anoperineal lesions in Crohn's disease is prognostic.

Magnetic resonance imaging (MRI) is an important tool for assessing anoperineal lesions (APL) in patients with CD, and scores have been developed for objective analysis. We report here our experience with a series of 56 patients, followed for CD with APL, reviewing the data in the literature.

Keywords: Ano-perineal crohn's disease; Anal fistulas; Pelvic MRI; Drainage; Infliximab.

1. Introduction

Anoperineal lesions (APL) in Crohn's disease (CD) are frequent, inaugural in 5-30% of cases [1], often complex, recurrent and difficult to treat [2]. Their appearance represents an important phase in the evolution of Crohn's disease (CD), as they have a major impact on continence, sexuality and quality of life. Magnetic resonance imaging (MRI) is an important tool for assessing anoperineal lesions (APL) in patients with CD [3,4], and scores have been developed for objective analysis. We report here on our experience with a series of 56 patients, followed for CD with APL, reviewing the data in the literature.

2. Materials and methods

This is a descriptive retrospective study over a period from January 2015 to January 2021, including all patients with CD with APL collated in the Medicine B department at Ibn-Sina Hospital, who underwent a proctological examination, sometimes under general anesthesia when the examination was painful, and a pelvic MRI.

Treatment was based on antibiotic therapy, drainage and an anti TNF α antibody with or without immunosuppressants (IS). Assessment of the outcome of APLs was based on a comparative analysis of MRI results taken before the start of combotherapy and assessment at 12 months after treatment. The parameters studied were PARKS classification stage for fistulae, number of fistulae, their extension, contrast uptake and evolutionary comparison and the presence of anal ulceration and stenosis.

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3. Results

We included 56 patients with a mean age of 37 years, ranging from 22 to 45 years, with a predominance of 39 (69.6%) females and 17 (30.3%) males and a sex ratio (F/H) of 2.2.

Clinically, APLs were revealed by proctalgia in 35 cases (62.5%), purulent discharge in 16 cases (28.57%), vulvovaginal oozing in 4 cases (7.14%) and fecal incontinence in 1 case (1.78%).

Proctological examination revealed anal fistulas in 38 patients (67.8%), which were simple in 14 and complex in 24 (Figure 1), complicated by abscesses in 8 (14.28%), anal stenosis in 13 (23.21%), anal ulceration in 17 (30.35%), some of which extended into the anal canal (Figure 2), and pseudo-condylomatous lesions in 11 (19.64%).

In the 38 patients with anal fistula (Figure 3), MRI revealed an intersphincteric course in 8 cases (21%), trans-sphincteric in 13 cases (34.2%) (Figure 4), supra-sphincteric in 4 cases (10.5%) and extra-sphincteric in 2 cases (5.2%). Recto-vaginal fistula was present in 1 patient (2.6%), ano-vulvar fistula in 3 cases (7.8%), ano-vaginal fistula in 3 cases (7.8%), ano-urethral fistula in one patient (2.6%) and ano-perineal fistula in 3 cases (7.8%). However, pelvic MRI did not reveal anal stenosis or images associated with ulcerative lesions.

Therapeutically, 35 (92.10%) patients had benefited from seton drainage along anal fistula, 24 patients were on IS alone (43%) and 32 patients (57%) were on combotherapy (azathioprine + infliximab).

Radiological comparison of APL evolution before and after treatment was as follows:

Under anti-TNF treatment, the analytical study showed an improvement in pelvic MRI contrast in 62.5% with a $p=0.001$, and a reduction in the number of patients with anal fistula (25(78.1%) patients vs. 32(100%).

In patients on IS alone, there was an improvement in pelvic MRI contrast in 8 patients (and a reduction in the number of patients with anal fistula 11 patients (45.8%) with a $p<.001$.



Figure 1 Horseshoe-shaped anal fistula



Figure 2 Multiple anal stenosis ulcerations and a pseudocondylomatous lesion



Figure 3 Double anal fistula

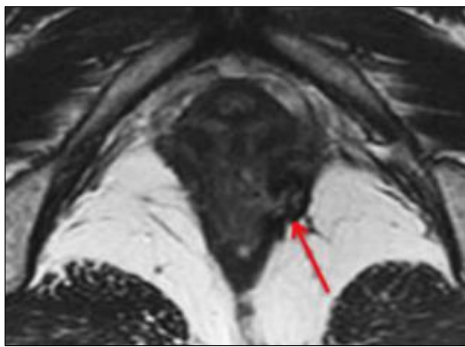


Figure 4 Trans-sphincteric anal fistula

4. Discussion

The presence of anoperineal lesions in Crohn's disease is prognostic. They are frequent and inaugural in 5-30% of cases [1], often troublesome, chronic, recurrent, extensive, complex and difficult to treat [2]. They can also lead to significant and irreversible sphincter damage: the internal anal sphincter is often damaged in cases of deep ulceration of the anal canal or suppuration. The external anal sphincter may be damaged in cases of suppuration or iterative drainage surgery. The proctological examination remains an important step in the evaluation of APLs, and can be difficult in patients with algae, hence the importance of examination under general anesthesia (GA) for better exploration of the anal and perianal regions. Radiological exploration of CD APLs can complement the data provided by clinical evaluation. The value of radiological exploration of primary lesions (ulcers, fissures) has not yet been evaluated. Magnetic resonance imaging (MRI) is an important tool for assessing anoperineal lesions (APL) in patients with CD [3,4]. In the case of suppurations and strictures, most authors recommend immediate radiological evaluation, particularly in patients who have failed medical or surgical treatment, and in patients with anal incontinence [5,6]. This recommendation could be extended to all secondary lesions, even those that are a priori simple, due to their evolutionary potential, diagnostic difficulties and the seriousness of the functional prognosis [7,8]. The aim of these examinations is to take an anatomical inventory of suppurated lesions (fistulous paths and collections), assess the sphincter apparatus and evaluate the appearance of the rectal wall. The preferred imaging modality is perineal MRI, a high-performance examination with a sensitivity of 100% and a specificity of 86% for the diagnosis of anal fistulas, and a concordance of 86-90% with the results of GA examination [5]. MRI is performed in 5 or 3 mm thin sections, in all three planes of space, using T2 and T1-weighted sequences without and after gadolinium injection and fat saturation. The severity of anal lesions in Crohn's disease is correlated with lesion size and anatomical impact. Several classifications have been proposed to quantify this severity. The most common is the Cardiff (or UFS) classification, which offers the advantage of considering all anal lesions of the disease under three classic headings (ulceration, fistulae and abscesses, stenosis) [9]. Clinical assessment of the severity of anal lesions unfortunately comes up against two major pitfalls: on the one hand, inter-observer agreement is sometimes inadequate, depending on the type of lesion; on the other, there is a lack of sensitivity for diagnosis and assessment of suppuration. The combination of MRI and GA examination could achieve 100% accuracy [10,11,12]. In order to assess perianal CD in a structured way using MRI, Van Assche et al. developed an index in 2003 [13]. Previous studies have shown that the index is capable of capturing imaging responses in clinical responders to

medical treatment [13,14]. The Van Assche MRI score may help in the management of secondary APL in CD, but its reproducibility and prognostic value have yet to be assessed [15]. Furthermore, the timing of post-treatment MRI and its value in assessing response have yet to be fully determined. Some data suggest that clinical cure may correlate with improvement in MRI scores and in particular T2 hyperintensity, although MRI cure is delayed by months or even years compared with clinical improvement based on assessment of fistula drainage [16]. Evaluation of any MRI-based score is challenging, as there is no gold standard for determining whether a fistula has responded or healed. Previous studies evaluating the use of the original Van Assche index have used different definitions and strategies to determine fistula response, remission and healing [13,17]. In our study, we used a combination of factors to determine clinical response, including the number of fistulas, their extension and their contrast uptake. Contrast uptake decreased significantly in patients with a clinical response. The results of MRI would modify the surgical attitude in 10 to 20% of cases by revealing fistulous extensions not objectified by GA examination [5,18,19,20]. MRI can also be used to differentiate between inflammatory and fibrosing fistulous tracts, and to assess the degree of rectal involvement, in the context of the evolutionary assessment of APLs in CD. The results are in good agreement with endoscopic findings [21]. Treatment with anti-TNF- α antibodies (infliximab, Remicade®) produces response and cure rates of 75 and 43% respectively in the induction phase at S8, and 60 and 38% at 24 weeks in severe and refractory anoperineal lesions [22]. However, suppurations require surgical treatment, and this should only be indicated after a precise assessment of the lesions, so as not to add iatrogenic complications to this burdensome disease.

5. Conclusion

Anoperineal lesions merit special attention because they are an unfavorable prognostic element in the natural history of Crohn's disease. They are often complicated, impair quality of life and cause functional sequelae. Pelvic MRI not only enables precise mapping, but also evaluation of the efficacy of biotherapy treatment, in terms of reduced contrast uptake in the APLs and a reduction in the number of fistulas. Their management remains difficult, and often requires recourse to a medical-surgical team.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

All authors contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript.

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