Anovaginal Fistulas: A Spectrum of Abnormalities at MR imaging

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Introduction
Anovaginal fistulas are an uncommon type of anal fistulous disease. It is important to completely evaluate the patient before any consideration is given to surgical correction. Endoanal MRI provides high resolution, multi-planar images of the anal canal, the rectum, and the vagina. The T2-weighted sequences can depict lesions with high signal intensity, such as fistulas and fluid collection. At our institution, endoanal MR imaging is routinely performed for the assessment of fistulas. The role of endoanal MRI in detection and classification of perianal fistulas is well established. To our knowledge, though, the specific contribution of endoanal MR imaging for the assessment of anovaginal fistulas is not clear yet.

Methods
Retrospectively we reviewed all endoanal MRI exams on women from January 1997 till June 2000. In this period, 36 patients with a suspected or proven anovaginal fistula were referred to the MRI section. The mean age of the patients was 36 years (range: 20-55 years). MRI reports were cross-referenced with the clinical and follow-up data. Sixteen patients were excluded from the study because fistulas were not adequately proved by clinical symptoms, digital exam, anoscopy, or by endoanal or transrectal ultrasound. In the remaining twenty patients, anovaginal fistulas were proved during surgery (n=13); by obvious clinical symptoms (loss of air, feces or pus through the vagina) (n=5); and by gynecological and/or surgical consultation and examination (n=3).

All MRI exams were performed by using an endoanal coil at 1.5 T (Philips Medical Systems, ACS-NT). In each patient, the following sequences were performed: axial T2-weighted contrast-enhanced fast field echo (CEFFE), axial T2-weighted fast spin-echo with fat saturation, and coronal and sagittal T2-weighted spin-echo without fat saturation.

All MRI exams were transported to a viewing station and systematically reviewed for the presence of fistula, localization of fistulas, distance of the fistula from the anal verge on a mid-sagittal plane, internal opening with the anal canal, internal opening with the vagina, presence of edema or abscess in the recto-vaginal septum, other associated perianal fistulas, and the internal and the external sphincter damage. In addition, the clinical reports were searched for possible causes of the fistulas.

Results
The fistulas could be identified in all patients as high signal intensity linear abnormalities extending between the anal canal and the vagina. In the mid-sagittal plane, the mean distance from the anal verge to the fistula was 25 mm (range 13-32 mm). The fistulas were typically located just cranial to the anterior part of the external anal sphincter. In all cases, the internal anal openings of the fistula with the anal canal could clearly be seen. In only 1 of 20 patient the internal opening with the vagina could not be identified with certainty. This patient had extensive edema in the recto-vaginal septum. In 4 of 20 patients, an associated abscess was identified in the recto-vaginal septum. The remaining 16 of 20 patients showed edema in the recto-vaginal septum. In 5 of 20 patients, in addition to the anovaginal fistula, another caudal extension of the fistula was seen which was located between the vagina and the anal canal. In these patients, there was an additional external opening in the region of the perineum. In 1 of 20 patients had a combined anovaginal and an intersphincteric (perianal) fistula. In 17 of 20 cases, a defect of the internal anal sphincter at the level of the internal opening could be seen. In 3 of 20 patients, both the internal and the external anal sphincters showed defects.

In 5 of 20 patients with Crohn's disease, two had simple anovaginal fistulas, one had an anovaginal fistula with caudal extension and abscess in the recto-vaginal septum, one patient had an anovaginal fistula with caudal extension but without abscess, and one patient had a combined ano-vaginal and intersphincteric fistula. In 5 patients with history of obstetric trauma or surgical procedures of the pelvic floor, two had simple anovaginal fistulas, two patients had an anovaginal fistulas with caudal extension and abscesses in the septum recto-vaginale, one had an anovaginal fistula with an additional caudal extension but without an abscess. In the remaining 10 patients, no particular cause could be identified clinically.

Discussion
In this study, we found a spectrum of abnormalities associated with the main anovaginal fistula. These abnormalities included additional extensions of fistulas in other regions, additional perianal fistulas, abscesses, and sphincter damage. The complicated anovaginal fistulas were often found in patients with underlying Crohn's disease and history of previous surgery or obstetric trauma. Mainly due to low inherent soft tissue contrast, endoanal ultrasound is often inaccurate in identification of anovaginal fistulas as well as in the assessment of additional abnormalities. Our results show that endoanal MRI is an excellent modality for the assessment of simple as well as complicated anovaginal fistulas.

References