

## Transrectal and transperineal sonography in the diagnosis of hydradenitis suppurativa

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**Background.** The aim of this paper is to present the application of transrectal and transperineal sonographies in the differential diagnosis of the hydradenitis suppurativa with the anal fistula.

**Patients and methods.** Transrectal and transperineal sonographies were performed in 8 patients with a clinical diagnosis of the anal fistula (6 patients) and the hydradenitis suppurativa (2 patients) in order to define precisely the relation of the inflammatory changes to the anal canal.

**Results.** In all patients the endosonography showed the preserved structures of the anal canal and the transperineal approach proved the superficial location of lesions.

**Conclusions.** Transrectal and transperineal sonographies are helpful in the differentiation between the hydradenitis purulenta and the anal fistula. The use of both methods enables a correct diagnosis.

*Key words:* hidradenitis suppurativa - ultrasonography; rectal fistula

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### Introduction

The hydradenitis suppurativa (HS) or Verneuil disease is a chronic purulent inflammation of the skin and subcutaneous tissue. This entity affects apocrine glands, which are located in axillas, groins, around breasts and anus. Apocrine glands in these regions differ

from glands situated in other regions of the body. They are usually located more deeply and are larger. According to the latest data the HS is genetically determined as an autosomal dominant disease, and also results from the elevated level of androgens.<sup>1</sup> Frequently the HS is misdiagnosed as an anal fistula. It is because the symptoms of the HS most frequently observed in the area of the anus or perineum include the inflammatory changes of the skin and subcutaneous tissue that, by the proctologic examination, very frequently resemble the anal fistula. The inflammation of the apocrine glands involves, however, superficial tissues and has no connection with the anal canal. Decisive examina-

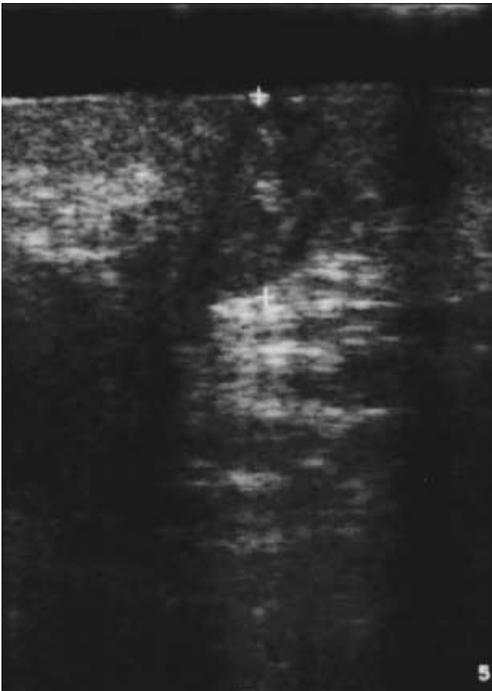
Received 26 June 2003

Accepted 24 July 2003

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tions for a differential diagnosis are anoscopy, both transrectal and transperineal sonographies which confirm the superficial location. The treatment of the Verneuil disease is alike as for the anal fistula and involves the resection of the inflamed skin and subcutaneous tissue. If the area of the inflammation is very extensive, a few steps procedures are performed, and more than once, if necessary, a skin graft is desirable to cover the wound. Some use an ozone therapy or a local radiotherapy for recurrent inflammatory changes.

The aim of the study was to present the application of transrectal and transperineal sonographies in the differential diagnosis of the hydradenitis suppurativa with the anal fistula.



**Figure 1.** Superficial abscess in transperineal sonography.

## Patients and methods

Eight patients (2 women and 6 men, aged between 27-62 years; mean age 54,5 years) with the clinical diagnosis of the anal fistula (6 patients) and the hydradenitis suppurativa (2 patient) were examined. All patients suffered from the recurrent purulent inflammation of the skin and subcutaneous tissue around the anus. They were all sent for a consultation to the proctologist. A proctologic examination together with a rectoscopy did not prove the relationship of these changes with the anal canal. To confirm this diagnosis transrectal and transperineal sonographies were also performed in 2 co-operating diagnostic departments. For this purpose Siemens Sonoline SI-450 with transrectal multiplane sector probe 7,5MHz (in 5 patients) and Bruel & Kjarer 3535 with 10MHz transducer (in 3 patients) were used, and a transperineal sonography was performed with the linear 7,5MHz probe. The patients were examined in the left lateral position. No preparation was required before the examination.

## Results

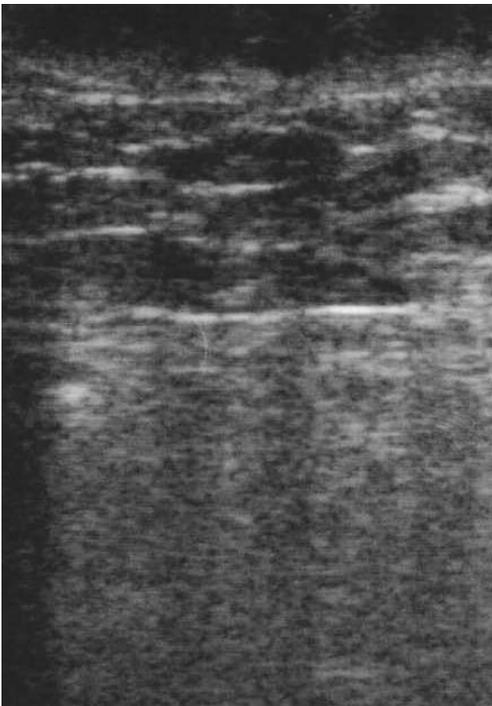
In all patients superficial inflammatory changes of the mixed echogenicity, mostly hypoechoic, were visualised in the transperineal sonography. Tubular forms were representing superficial fistulas, round or oval represented superficial perianal abscesses (Figure 1) and uniform hypoechoic areas were seen in the areas of the inflamed skin and subcutaneous tissue (Figures 2a, 2b). A transperineal approach precisely defined the range of inflammation and correlated it with skin changes. The transrectal sonography was decisive in the precise assessment of the relation of these lesions to the anal canal. In all studied cases the preserved structures of the anal canal were shown (Figure 3). A transrectal approach was useful in 2 patients who

had relatively deep located abscesses and so it was difficult to define their relation to the anal canal. The final diagnosis was made after the confrontation of both approaches.

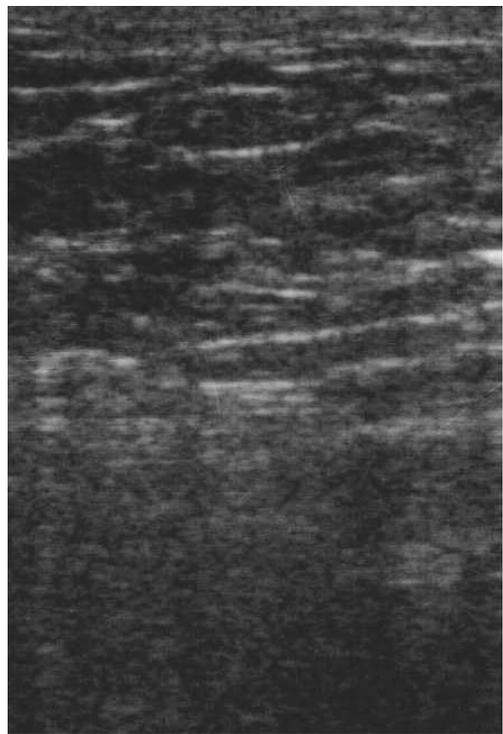
### Discussion

Although the inflammation of the apocrini glands of the perianal area is not common its tendency to recur and involve the extensive area of skin causes a serious therapeutic problem. A prompt diagnosis is requisite for a successful treatment. As skin changes resemble the anal abscess or external openings of the anal fistula the HS is rarely recognised. An anal endosonography is currently one of the most widely used imaging techniques in the diagnosis of anal canal diseases.<sup>2-9</sup> A major role of the endosonography, as well as other imaging modalities, is to establish the

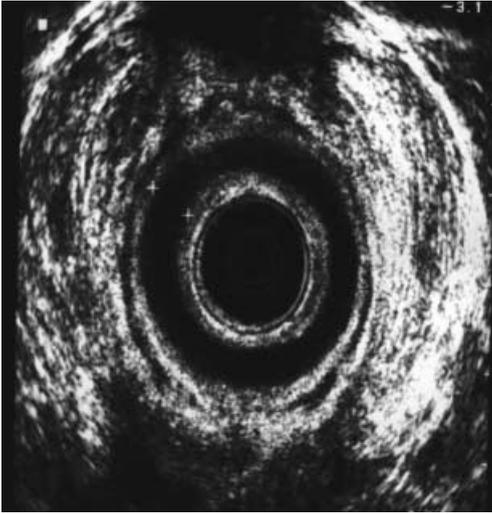
relation of the fistula and the anal abscess to the anal sphincters. This simple and well tolerated examination allows in many cases for a precise and definitive diagnosis of the fistula and the abscess as well for the follow-up of these patients after the surgery. The accuracy of the anal endosonography in diagnostics of anal fistulas is up to 70%.<sup>10,11</sup> The inflammation of the apocrini glands involves superficial tissues with the creation of small shallow abscesses and fistulas. A transperineal sonography is a satisfactory imaging examination to confirm this location. A transrectal sonography is rarely necessary in patients with the HS. Limitations of the endoanal sonography resulting from incomplete coupling of the probe to anal walls at the level of the anal verge are well known.<sup>12</sup> Air between the transducer and the anal wall produces artefacts, which obscure the image of the anal canal. In such cases a transperineal approach



**Figure 2a.** Hypoechoic inflamed subcutaneous tissue in the right perianal area.



**Figure 2b.** Normal echogenicity on the left side.



**Figure 3.** Preserved layered structure of the anal canal in transrectal sonography.

facilitates the diagnosis. Superficial abscesses, fistulas and the inflammation of the skin are better visualised using the linear probe with a large amount of gel for better coupling and stand-off (Figures 1,2,3).<sup>12-16</sup> The main indication for the endosonography is to exclude the communication of the perianal lesion with the anal canal. In 2 of the presented group of 8 patients it was difficult to define with the transperineal sonography if the very superficial abscess had the communication with the anal canal or not. The transrectal sonography showed a normal anal canal. Some reports proved a high accuracy of the transperineal approach not only in the visualisation of anal tumours and local recurrence, especially following the abdomino-perineal resection of rectal or anal tumours, but also in the diagnosis of anal abscesses and fistulas, and sphincters trauma involving a distal part of the anal canal. The quality of the image in the transperineal sonography is, however, not as high as in the transrectal endosonography; thereby its role is only additional. It may be very helpful in patients with the anal fistula or the abscess in whom, because of the strong pain, it will be impossible to introduce

the probe into the anal canal. Under the control of the perineal probe, a drainage of the abscess may also be done, and a biopsy of any solid lesion or a differentiation between cyst, haematoma or abscess can be undertaken. In patients with the HP a transperineal approach is also very helpful. In 6 out of 8 presented cases with the initial diagnosis of the anal fistula superficial changes, typical for the HP were shown. In two others, deep abscesses were also visible; however, the reliable diagnosis was possible after the confrontation with the endosonography. Still, it must be stressed that in this presented entity a proctologic examination remains the most crucial for the diagnosis. Imaging techniques are also very helpful in the differential diagnosis, which is important in deciding on the choice of the surgical procedure.

## Conclusions

Transrectal and transperineal sonography are helpful in differentiation Verneuil disease from anal fistula. The use of both these methods enables correct diagnosis.

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