

ANAL FISTULA

Transperineal ultrasound in the detection of perianal and rectovaginal fistulae in Crohn's disease.

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OBJECTIVES: Perianal and rectovaginal fistulae are common complications in Crohn's disease. Magnetic resonance imaging (MRI) and endoanal ultrasound are used for imaging perianal fistulae and abscesses, but both methods require expensive equipment and experienced investigators. Transperineal ultrasound may represent another method of detecting perianal complications in Crohn's disease. We investigated Crohn's disease perianal and rectovaginal fistulae using transperineal ultrasound and compared the findings with results of endoanal ultrasound as reference standard. **METHODS:** A total of 46 patients with Crohn's disease and perianal and/or rectovaginal or anovulvar fistulae underwent, transperineal and endoanal ultrasound, on the same day. Transperineal ultrasound was performed using regular convex and high-resolution linear probes. Endoanal ultrasound was performed using an ultrasound system with a 7 MHz rotating endoanal probe. Fistulae were classified according to Parks' classification in intrasphincteric, transsphincteric, suprasphincteric, and extrasphincteric. Rectovaginal or anovulvar fistulae were described separately. Presence of abscesses was also reported. **RESULTS:** Fifty-two fistulae (3 intra-sphincteric, 28 transsphincteric, 8 suprasphincteric, 2 extrasphincteric, 9 rectovaginal, and 2 anovulvar) were detected by transperineal ultrasound. Endoanal ultrasound confirmed the correct classification of 45 fistulae (predictive positive value: 86.5%). Of the 53 fistulae detected by endoanal ultrasound, 45 were correctly classified by transperineal ultrasound (sensitivity 84.9%). Transperineal ultrasound showed 10 perianal abscesses: 2 horseshoe, 4 deep, and 4 superficial. Endoanal ultrasound confirmed all horseshoe, 3 deep, and 2 superficial abscesses and did not find further abscesses. **CONCLUSIONS:** Transperineal ultrasound is a simple, painless, real-time method to detect and classify perianal and rectovaginal fistulae and/or abscesses in Crohn's disease.

Which method is best for imaging of perianal fistula?

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BACKGROUND: Successful surgery for perianal fistula is contingent upon accurate pre-operative classification of the primary tract and its extensions. We aimed to find, using "evidence based medicine" (EBM) methods, the optimal technique for fistula classification: MRI, anal endosonography (AES) or clinical examination. **METHODS:** A clinical question was derived, "In patients suspected of having perianal fistula, how does MRI compare to AES and clinical assessment for discriminating simple from complex disease". A search of primary literature and secondary evidence resources was performed and expert opinion sought. Inclusion criteria were blinded prospective studies (level 2b +) of patients undergoing preoperative MRI, clinical examination +/- AES using a clinical outcome based reference standard. Retrieved literature was appraised using EBM methods. **RESULTS:** The highest-ranking evidence found was level 1b. MRI is more sensitive 0.97(CI 0.92-1.01) than clinical examination, 0.75(0.65-0.86) but comparable to AES, 0.92(0.85-0.99) for discriminating complex from simple disease. The positive LR for MRI confirming complex disease is 22.7 compared to 2.1 and 6.2 for clinical examination and AES, respectively. **CONCLUSION:** MRI is the optimal technique for discriminating complex from simple perianal fistula, although AES is superior to clinical examination, and may be used if MRI availability is restricted.

The role of transperineal ultrasonography in the assessment of the internal opening of cryptogenic anal fistula.

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PURPOSE: The aim of this study was to assess the reliability of transperineal ultrasonography (TPUS) in the pre-operative identification of the internal opening of anal fistulas compared to conventional proctological examination and operative findings. **METHODS:** Forty-three patients with anal fistula were assessed by TPUS with and without the use of hydrogen-peroxide injection (E-TPUS) in an attempt to identify the internal opening. Results were compared to preoperative conventional examination and operative findings. **RESULTS:** Operative assessment showed an anterior internal opening in 29 patients (67.4%) and a posterior opening in 14 (32.6%). Compared to the operative findings, the agreement rate for the identification of the internal opening was 74.4% for physical examination alone, 93.0% for TPUS and 90.7% for E-TPUS. Physical examination was less accurate in detecting the internal opening than both TPUS ($p=0.014$) and E-TPUS ($p=0.026$). **CONCLUSIONS:** TPUS and E-TPUS are superior to physical examination in the identification of internal openings in anal fistulas. Hydrogen peroxide injection does not provide additional advantages.

ATROPHY OF EAS

Diagnostic precision of endoanal MRI in the detection of anal sphincter pathology-a meta-analysis.

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OBJECTIVE: This study aims to evaluate the diagnostic precision of endoanal magnetic resonance imaging in identifying anal sphincter injury and/or atrophy when compared with either endoanal ultrasound or surgical diagnosis. **MATERIALS AND METHODS:** Quantitative meta-analysis was performed on nine studies, comparing endoanal MRI with endoanal ultrasound or surgical diagnosis in 157 patients. Sensitivity, specificity, and diagnostic odds ratio were calculated for each study. Summary receiver operating characteristic curves (SROC) and subgroup analysis were undertaken. **RESULTS:** The overall sensitivity and specificity of endoanal MRI for external sphincter injury was 0.78 (95%CI: 0.66-0.84) and 0.66 (95%CI: 0.51-0.79), respectively. For internal sphincter injury detection, this was 0.63 (95%CI: 0.50-0.74) and 0.71 (95%CI: 0.60-0.81), respectively. For detection of atrophy, this was 0.86 (95%CI: 0.71-0.95) and 0.82 (95%CI: 0.65-0.93), respectively. The area under the SROC curve and diagnostic odds ratio were 0.84 (SE = 0.07) and 6.14 (95%CI: 2.17-17.4) for external sphincter injury, 0.79 (SE = 0.07) and 4.60 (95%CI: 1.75-12.15) for internal sphincter injury, and 0.92 (SE = 0.08) and 21.49 (95%CI: 2.87-160.64) for sphincter atrophy. **CONCLUSION:** Endoanal MRI was sensitive and specific for the detection of external sphincter injury and especially sphincter atrophy. It may be useful as an alternative to endoanal ultrasound in patients presenting with fecal incontinence, although further clinical studies are needed to identify its best application in clinical practice.