Endosonographic and manometric assessment of the internal anal sphincter in patients with chronic anal fissure

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Introduction

High anal resting pressures have been implicated in the pathophysiology of chronic anal fissure. It is not known, however, whether altered function is associated with any morphological abnormalities of the internal anal sphincter (IAS). The aims of the present study were to determine IAS thickness in patients with chronic anal fissure and to investigate the correlation between IAS thickness and anal resting pressure.

Patients and methods

Patients with chronic anal fissure were prospectively included between November 1999 and May 2004. Patients with history of inflammatory bowel disease, anal surgery, and those previously treated with nitroglycerine ointment or botulinum toxin were excluded. Anal endosonography and manometry were performed. IAS thickness was considered to be increased when it was > 2.5 mm in patients ≤ 50 years and > 3 mm in patients > 50 years. Anal resting pressure was considered to be increased when it was higher than 80 mmHg.

Results

One hundred and twenty-four patients were included in the study. An abnormally thick IAS was observed in 111 patients (89.5%). The mean IAS thickness was 3.60 ± 0.76 mm. IAS hypertonia was found in 84 patients (67.7%). The mean anal resting pressure was 100.9 ± 39.4 mmHg. No correlation was found between IAS thickness and anal resting pressure (r = 0.074; p =0.413) (Fig 1).

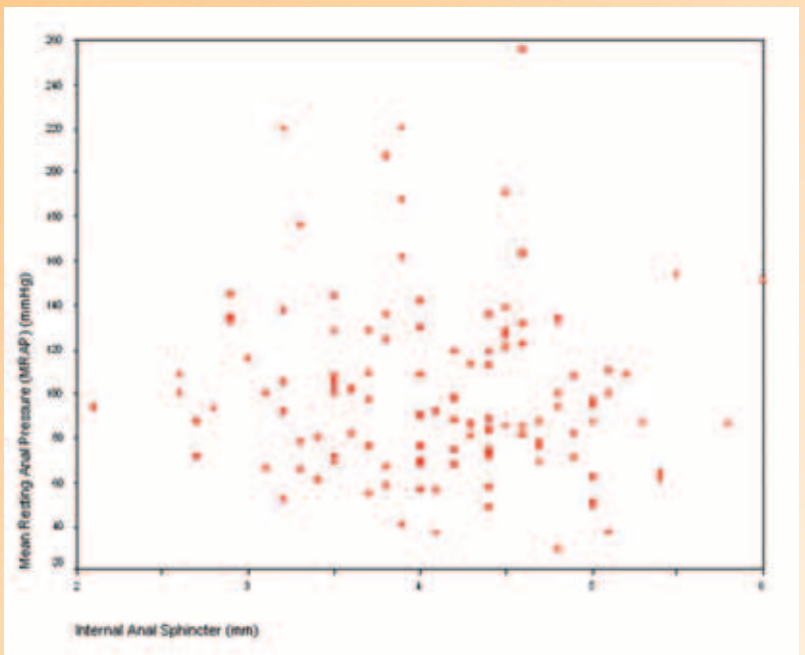
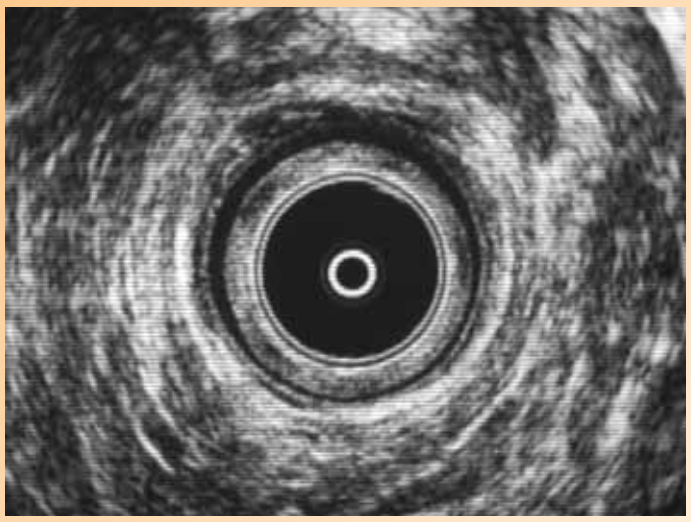


Fig 1: Correlation between IAS thickness and anal resting pressure



Endoanal ultrasound in a patient with anal fissure with normal thickness of IAS (2.1mm).

Endoanal ultrasound in a patient with anal fissure and hypertrophic IAS (4.2 mm)

Conclusion

The majority of the patients with chronic anal fissure had an hypertrophic IAS. However, increased thickness of the IAS was not associated with higher anal resting pressure.

Reference

1. Pascual M, Courtier R, Gil MJ, Puig S, Serranno A, Andreu M, Pera M, Grande L. Estudio ecográfico y manométrico del esfínter anal interno en individuos con fisura anal crónica. Cirugía Española 2005 ; 77(1) : 27-30.