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Published Paper's Title : Tools Used To Asses Anal Sphincter Injuries After Kshar Sutra Therapy In Fistula In Ano

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Research Paper

Tools used to asses anal sphincter injuries after kshar sutra therapy in Fistula in ano

DR Sanjay Singh Chauhan

Declaration

The Declaration of the authors for publication of Research Paper in Asian Journal of Modern and Ayurvedic Medical Science (ISSN 2279-0772) : DR Sanjay Singh Chauhan the author of the research paper entitled Tools used to asses anal sphincter injuries after kshar sutra therapy in Fistula in ano declare that ,take the responsibility of the content and material of my paper as I myself have written it and also have read the manuscript of my paper carefully. Also, I hereby give my consent to publish my paper in ajmams , This research paper is my original work and no part of it or it's similar version is published or has been sent for publication anywhere else. I authorize the Editorial Board of the Journal to modify and edit the manuscript. I also give my consent to the publisher of ajmams to my the copyright of my research paper.

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Abstract-Fistula in ano is an age old problem and the operations for this disease were designed from time to time to suit the needs of the day. Many surgical procedures available for the treatment of fistula in ano but the results of these procedures are not very satisfactory especially for the treatment of complex and recurrent fistula in ano. As many surgical procedure frequently leads anal sphincteric injures which may leads to complications like incontinence, which creates psychological troublesome along with discomfort.

Ksharsutra is a unique medicated seton helps in both cutting as well as drainage of fistulous tract. The cutting and healing of fistulous tract takes place simultaneously therefore the possibility of damage to anal sphincter is less and chances of incontinence are practically nil.

Key word-Kshara sutra, Fistula in ano, Anal Manometry, Trans Rectal ultra sonography

INTRODUCTION-

Ano-rectal injuries can be assessed in three ways:

1- Clinical assessment – By fecal incontinence severity index

2- Functional assessment –By manometry, EMG (Electromyography)

Anatomical assessment – By transrectal ultrasonography Fecal incontinence

severity index is based on four type of leakage (gas, mucous , liquid stool, solid stool) and five frequencies (1-3 per month, 1 per week, 2 per week , 1 per day, 2 or more per day)
Other severity index scales include – AMS, Pescaturi, William score, Kirwan score and vaizey scale.

Manometry is most established and widely available tools for investigating anorectal function, Rectoanal reflex activity, Rectal anal sensation changes in anal and rectal pressure during attempt to defecation and rectal compliance.

Transrectal Ultrasonography is a valuable diagnostic tool in patients with fecal incontinence because it provides a 360 degree image of anal canal with direct image of the internal and external anal sphincter together with puborectalis muscle. Clear images of hypo-echoic internal sphincter and hyper-echoic external anal sphincter and puborectalis muscle helps in distuinguishing fecal incontinence due to sphincter injury and neurogenic or idiopathic incontinence. This may directly influence further treatment. Moreover endoanal ultrasound can determine exact localization and size of muscle defect. Any discontinuity of the hypo-echoic band of internal anal sphincter is suggestive of sphincter injury. Detection of the injury of the external anal sphincter is more challenging especially in anterior portion. Loss of the fine fibrilar echo structure is suggestive of external anal sphincter injury.

1. Anal manometry

Anorectal manometry is a basic test of anorectal function and is widely used as an initial study for patients with anal incontinence. This study provides a profile of anal canal pressures during rest and voluntary squeeze, evaluation of the rectal-anal inhibitory reflex (RAIR), and values for rectal sensation, compliance, and capacity.Manometry can corroborate physical exam findings by providing an objective value to anal pressures at rest and during voluntary squeeze. These measurements can be used for comparison after treatment.

Indications

First, manometry is used for evaluation of incontinence. A sphincter defect can be located and quantified. Second, constipation, mainly outlet obstruction type, is investigated to determine whether abnormal pressures exist. The loss of the rectoanal inhibitory reflex (RAIR) suggests Hirschsprung's disease. Third, some anorectal pain syndromes are associated with abnormal pressures within the sphincter mechanism. Fourth, the study is conducted to establish a baseline when an anorectal or pelvic floor procedure is contemplated. For example, if biofeedback or a surgical procedure is to be used for incontinence or constipation, a pre- and postprocedure study provides the means to quantify a change.

2. Anal Endosonography

Anal ultrasound is used to look for anatomic abnormality of the anal sphincters. Ultrasound has replaced EMG as the best means to define an injury. AES is the diagnostic imaging technique of

choice for providing information on the integrity of the internal and external anal sphincters and detecting sphincteric defects with a reported accuracy of 90 to 100%.

Equipment

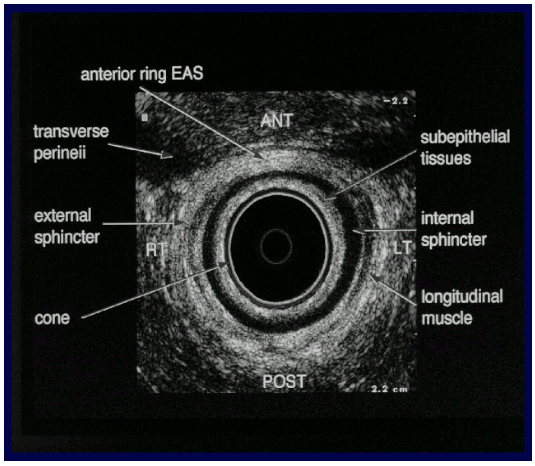
The most often used ultrasound machine displays a 360-degree image made possible by a mechanically rotating transducer on a hand probe. The 10-MHz transducer provides the clearest images.

Technique

The only preparation is a small enema. Sedation is not necessary. The patient is placed in the left decubitus position. The ultrasound system is assembled, and water is introduced to fill the cap covering the transducer. Air bubbles must be removed, because they cause an artifact. A digital examination is performed to find abnormality, but also to define the direction for insertion of the probe. The probe is introduced blindly to the point where the transducer is in the rectum. Images are made in the upper, middle, and distal anus, which is the distal 4–5 cm.

Interpretation

Bartram[ref] describes six ultrasonographic layers in the anal canal:



l) a hyperechoic layer that is the interface of the cone with the tissues;

2) a hypoechoic layer that represents the mucosa;

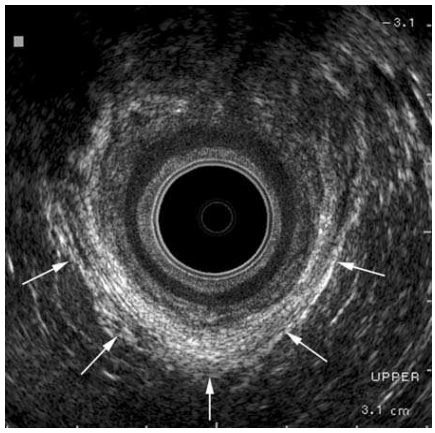
3) a hyperechoic layer that represents the submucosa;

4) a hypoechoic layer that is the internal anal sphincter;

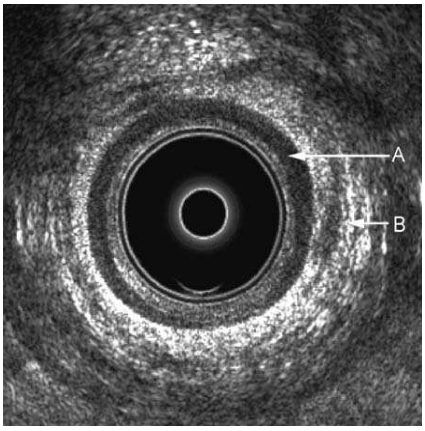
5) a hyperechoic layer that represents the intersphincteric plane and the longitudinal muscle; and

6) a layer of mixed echogenicity representing the external anal sphincter.

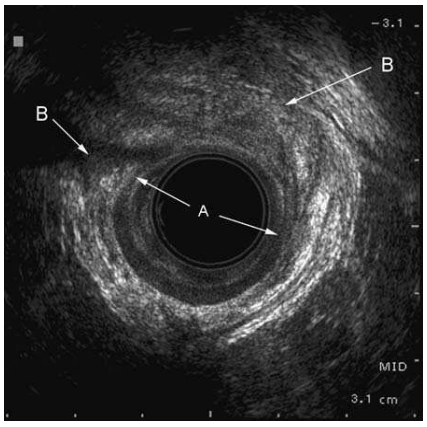
In the upper anal canal, the puborectalis muscle is seen to loop around the upper anus. In the middle anus, both the internal and external sphincters may be seen. In the distal anus, the subcutaneous portion of the external sphincter is visualized, but the internal sphincter does not extend this far. The thickness of the internal sphincter stands out in the middle of the anus. The normal adult sphincter is 2–3 mm thick. A neonate may have a sphincter of 1 mm, and in the elderly 3–4 mm thick.



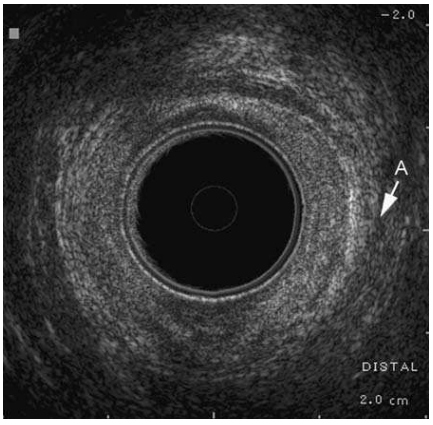
(a)



(b)



(c)



(d)

Figure shows- (a) upper anal canal U shaped structure shows puborectalis sling (b) mid part of anal canal A- internal sphincter B- external sphincter (c) lower part of anal canal shows only external sphincter (d) A- internal sphincter defect B- external defect

Interpretation

A thin muscle suggests primary degeneration of the internal sphincter. After lateral internal sphincterotomy, a distal defect can be seen in the internal sphincter. Obstetric trauma may extend into the transverse perineus muscle, the external sphincter, or completely down through the internal sphincter. The injury blurs out portions of the normal rings of tissue.

3. EMG of the Anal Sphincter

EMG is used primarily in evaluating fecal incontinence. EMG is a means of assessing the motor unit. The integrity of the muscle may be assessed as well as its nerve supply. The integrity of external anal sphincter innervation after sphincter

injury can be demonstrated. Sphincter reinnervation secondary to pelvic neuropathy can be demonstrated. EMG may also be used to "map" specific anatomic sphincter defects. This mapping technique has largely been replaced by anal ultrasonography, which is simple, accurate, and painless. Anal EMG may also be used to demonstrate appropriate relaxation and contraction of the anal muscle and can be used in biofeedback therapy.

4. Endoluminal MRI

Endoluminal MRI provides visualization of the normal anatomy and pathologic conditions of the anal canal. Lesions of the external sphincter, such as sphincter defects and scar tissue, are accurately identified in 90 to 95% of patients.

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