Comparative Study Between Endoanal Ultrasonography And Magnetic Resonance Imaging In Preoperative Evaluation Of Perianal Fistula.

Thesis

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بسم الله الرحمن الرحيم

[وأنزل اللـه عليـك الكتــاب
والحكمة وعَلَّمَكَ مَا لَمْ تَكُن تَعْلَمُ
وكَانَ فَضْلُ اللَّهِ عَلَيْكَ عَظِيماً]

صدق الله العظيم

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Haitham Soliman..

Abstract

Purpose:

The aim of our study was to compare between the use of 2D-3d Endoanal ultrasonography (with and without enhancement of hydrogen peroxide H_2O_2) and body coil M.R.I. in preoperative assessment and diagnosis of perianal fistulae and abscesses; by estimating the degree of accuracy for both through agreement of each modality with the surgical findings. Also, concordance with each other was evaluated ; to determine whether EAUS can be an appropriate alternative to MRI or not.

Methodology:

A total of 60 patients of both genders, with ages ranging from 18 to 65 (mean age 39), who were suspected of having discharging, low or high, recurrent or non recurrent perianal fistulae , had done routine labs and underwent 10-MHz, 2D & 3D anal endosonography (BK MEDICAL U.S SCANNER 1202), with or without H_2O_2 enhancement, and body-coil phased array MR imaging. Primary Fistulous tract and its relation to the sphincter complex, side tracts, internal opening and any abscess cavity or associated sepsis were assessed with each modality, with reviewers blinded to findings of both assessments. Results obtained, were compared with the intra operative findings, as a reference standard, to assess accuracy for each modality. Also, both results were compared with each other to show to which extent, both modalities agreed with each other

Results:

Both modalities showed comparable near results and acceptable degree of agreement with each other in the aspects of preoperative evaluation of the perianal fisulae. However, EAUS was less superior than body coiled M.R.I. in the agreement with the surgical findings; for the secondary tracts of perianal fistulae but, still the EAUS showing higher agreement with surgery concerning the primary tracts, the internal opening and associated sepsis or abscesses cavities, beside its better delineation of the sphincter complex.

Conclusion:

The high accuracy of EAUS, which is comparable and even more superior than MRI at most times , indicates that EAUS may become the first choice in the preoperative assessment of anal fistulae, since it has advantages over MRI including easier use and learn, quickness and portability which allows doing the investigation in the operation room and lower cost for the patient.

Key words

Comparative Study Between Endoanal Ultrasonography And Magnetic Resonance Imaging In Preoperative Evaluation Of Perianal Fistula.

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List Of Abbreviations

AIDS:	**Acquired immunodeficiency syndrome.**
CLL:	**Conjoined longitudinal layer.**
$Co_{2:}$	**Carbon dioxide.**
C.T:	**Computed tomography.**
EAS:	**External anal sphincter.**
EAUS	**Endo anal ultrasonography.**
EUS:	**Endoultrasonography.**
HIV:	**Human immunodeficiency virus.**
HPUS :	**Hydrogen peroxide ultrasonography**
H2O2:	**Hydrogen peroxide.**
IAS:	**internal anal sphincter.**
IBD:	**Inflammatory bowel disease.**
IFO:	**Internal Fistula opening.**
IS:	**Intersphincteric.**
LA:	**Levator Ani.**
LASER	**Light amplification by stimulated emission of radiation.**
LIFT	**Ligation of intersphincteric fistula tract.**
LM:	**Longitudinal Muscle**
MHZ:	**Mega hertz.**
M.R.I:	**Magnetic Resonance Imaging**
MSA	**Muscularis submucosa ani.**
NACL	**Sodium Chloride.**
PA	**Puboanalis.**
PB:	**Pubic bone.**
PC:	**Pubococcygeous.**
P R:	**Puobrectalis.**
RF:	**Radiofrequency.**

SD:	**Standard deviation.**
SNR:	**Signal to Noise Ratio.**
SP:	**Symphisis pubis.**
SSPS:	**Statistical Package for the Social Science.**
STIR :	**Short T1 inversion recovery.**
T:	**Tesla.**
TB:	**Tuberculosis.**
TP:	**Transverse perinea.**
TRUS:	**Trans Rectal Ultrasound**
2D:	**Two dimensions.**
3D:	**Three dimensions.**

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INTRODUCTION

Despite the fact that anal fistulae are very common and have been studied extensively, some complex forms still continue to pose a difficult surgical problem. The aim of treatment for an anal fistula is to permanently eliminate abscess formation and achieve healing while preserving anal function and continence. Overly aggressive fistulotomy can lead to postoperative fecal incontinence, whereas inappropriate conservative treatment could lead to fistula recurrence. Therefore, accurate preoperative assessment of a fistula is necessary for optimal surgical results **(Kim Y, Park YJ,2009).**

Inspection and digital examination with or without anesthesia are basic diagnostic methods. However, digital examination may fail to detect complex fistulae or to localize the internal opening. It is now well established that preoperative imaging modalities can alert the surgeon to fistula components that might otherwise be missed **[(Buchanan GN, Halligan S et al.,2004)- (Lindsey I. et al., 2002)].**

From these modalities is the fistulography and computed tomography (CT) which have been disappointing and give insufficient data for surgery planning, beside that fistulography is shown to be inaccurate in many instances. In recent years, MR imaging has emerged as the leading contender for preoperative classification of fistula in ano. The ability of MR imaging to help not only accurately classify tracts but also identify disease that otherwise