Role of Magnetic Resonance defecography in assessment of pelvic floor dysfunction

Thesis

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Marwa Sayed Mohammed Moussa

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List of Abbreviations

ARA	Anorectal angle
ASUH.....	Ain Shams University Hospital
ATFP	Arcus tendineus fascia pelvis
ATLA ……	Arcus tendineus levator ani
b-FFE	Balanced fast field echo
ES.....	External sphincter
ETL	Echo train length
FFE.....	Fast field echo
FIESTA.....	Fast imaging employing steady state acquisition
FISP	Fast imaging with steady state free precession
FLASH.....	Fast low angle shot
FOV	Field of view
FSE.....	Fast spin echo
GRE	Gradient Echo
H line	Hiatus line
HASTE.....	Half-fourier acquisition single shot turbo spin-echo
HMO	H line, M line, organ prolapse
IS	Internal sphincter
M Line.....	Muscular pelvic floor descent
MPL ……	Mid pubic line
MRI.....	Magnetic resonance imaging
NEX	Partial signal averaging
ODS	Obstructed defecation syndrome
PC.....	Pubocervical
PCF	Pubocervical fascia
PCL	Pubococcygeal line

List of Abbreviations (Cont.)

PD	Proton density
POP	Pelvic organ prolapse
RF	Radio-frequency
SAR.....	Specific absorption rate
SE.....	Spin echo
SNR.....	Signal to noise ratio
SPGR	Spoiled gradient echo
SSH-TSE……	Single-shot turbo spin echo
SSFP.....	Steady state free precession
SUI …….	Stress Urinary Incontinence
SSFSE	Single Shot Fast Spin Echo
TE.....	Time to echo
TR	Time to repeat
TSE	Turbo spin echo
UB	Urinary bladder
UD.....	Uterine descent
VCUG	Voiding cystourethrography

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Introduction

Pelvic floor failure is a major medical and social problem.It is primarily a problem for multiparous and postmenopausal females.Though it may also affect premenopausal women and men in a smaller proportion.

It can be presented with non specific symptoms, such as urinary and or fecal incontinence or chronic constipation, pelvic pain, and organ prolapse **(*Buy and Ghossain, 2013*)**.

Routine clinical examination and various medical staging systems have been used for the assessment of pelvic floor failure. One of the most accepted clinical staging systems is Pelvic Organ Prolapse Quantification (POP-Q), introduced by the International Continence Society **(*Lalwani et al., 2013*)**.

However, they don't involve a direct assessment method of the anatomy, also the occurrence of underestimation of the extent & degree of the dysfunction, misdiagnosis the site of the prolapse (in more than 45% of cases), and is also less useful for surgical planning. There are other functional investigations, like urodynamic studies and dynamic cystoproctography are currently used to evaluate the dynamics of the pelvic floor

MR defecography offers excellent demonstration of the pelvic soft tissues.It is used to evaluate the functionality of the pelvic floor and pelvic organs while defecating, hence it is called dynamic or functional MR imaging. It is important to perform a dynamic study because certain abnormalities are revealed only during defecation; for example, rectal prolapse or intussusception. Also it allows assessment of spastic pelvic floor

syndrome and descending perineum syndrome and visualization of enteroceles without exposing the patient to harmful ionizing radiation ***(Colaiacomo et al., 2009)***.

The presence of cine T2 -weighted imaging sequences and high quality surface coils has made MR imaging an excellent competitor for the urodynamic studies, clinical examinations as well as cystoproctography.It doesn't include any of the other known functional MR techniques like DWI and contrast study. A standardized MR imaging protocol is presented that allows for complete imaging of pelvis in less than 15 minutes **(*Lalwani et al., 2013*)**.

Moreover, it is of great value in women with symptoms of multicompartment involvement for whom a complex repair is planned or who have undergone previous repairs, magnetic resonance (MR) imaging can be a useful preoperative planning tool **(*Lalwani et al., 2013*)**.

Aim of Work

The present study is aiming to highlight the role of MR defecography in assessment of pelvic floor failure.