Role of MR Imaging of Uterine Leiomyomas before and after Embolization

Essay

Submitted for partial fulfillment of Master Degree in Radiodiagnosis

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تصوير الأورام الليفية بالرنين المغناطيسي قبل وبعد سدها شريانياً

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مقدمه للحصول على درجة الماجستير في الأشعة التشخيصية

مقدمه من

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بسم الله الرحمن الرحيم

" سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ "

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Samar Ahmed Elsaid

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Introduction

Leiomyoma, the most common uterine neoplasm, is composed of smooth muscle with varying amounts of fibrous connective tissue. Most leiomyomas are asymptomatic, but patients may present with abnormal uterine bleeding or bulk-related symptoms. ***(Sandeep et al., 2012).***

Medical treatment with hormone therapy is usually prescribed initially to reduce or eliminate symptoms related to fibroid. Surgical treatment, such as myomectomy or hysterectomy is proposed subsequently in cases of failure ***(Brunereau et al., 2008).***

For some patients, major surgery is a high risk procedure so that interventional radiology provides an alternative tool to invasive therapeutic surgical procedure. Nowadays, however, interventional radiology is widely accepted as a distinct line of treatment for many diseases providing that being a less invasive procedure ***(Kirch et al., 2006).***

Over the past decade, uterine fibroid embolization (UFE) has been an effective minimally invasive treatment for symptomatic patients. Magnetic resonance (MR) imaging is the most accurate imaging technique for detection and evaluation of leiomyomas and therefore has become the imaging modality of choice before and after UFE ***(Sandeep et al., 2012).***

MR imaging can help triage patients to the most appropriate therapy, thereby decreasing the number of unnecessary surgeries. This reduction may potentially reduce healthcare expenditures. Over time, preprocedure MR imaging is the diagnostic tool of choice for determining patient eligibility for UFE and for assessing potential procedural risk ***(Sandeep et al., 2012).***

Advantages of MRI over any other modality of imaging include multiplanar imaging capability, a larger field of view, increased spatial resolution, improved anatomic detail, and the ability to detect other pelvic disorders. MRI can assess fibroid viability by detecting contrast agentenhancement. Magnetic resonance angiography has a useful role in evaluation of pelvic vasculature. Magnetic resonance parameters such as T1 and

T2 relaxation times and diffusion-weighted characteristics have an emerging role in predicting outcome before and after embolization. MRI may be used to evaluate technical success after embolization ***(Kirbyet al., 2010).***

Aim of the work:

To review the advantages of magnetic resonance imaging (MRI) including diagnostic features, viability and in demonstration of vascular anatomy before arterial embolization. Also review the role of MRI in predicting postembolization outcome.