Role of Imaging in Diagnosis and Management of Ectopic Pregnancy

Essay

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Radiodiagnosis

By

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

سورة البقرة آية (32)

*Praise is to **ALLAH**, who gave me the strength and knowledge to complete this present work.*

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Amal Talat

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List of Abbreviations

AP	Abdominal Pregnancy
CSP	Cesarean Scar/Section Pregnancy
CT	Computed Tomography
D&E	Dilatation & Curettage
EMM	Endo Myometrial Mantle
EP	Ectopic Pregnancy
HOC	Hemorrhagic Ovarian Cyst
IUP	Intra Uterine Pregnancy
KCL	Kalium (potassium) Chloride
IVF	In vitro fertilization
LUS	Lower Uterine Segment
MRI	Magnetic Resonance Imaging
MTX	Methotrexate
UAE	Uterine Artery Embolization
US	Ultrasound
B-HCG	Beta-Human Chorionic Gonadotrophin

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	with a yolk sac and a live embryo (arrowhead), which is suggested by the presence of cardiac activity.	

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Introduction

The incidence of ectopic pregnancy has increased significantly in the past few decades. This is in part due to an increased incidence of pelvic inflammatory disease and assisted reproduction techniques (***Savolainen, 2012)***.

Ultrasound has always been the gold standard imaging modality for those patients, and patients presenting to the emergency department in the first trimester with pregnancy-related complaints in general. This is due to the fact that it does not require the use of potentially harmful ionizing radiation, is readily available, and allows real-time imaging. The use of high-resolution endovaginal sonography, in conjunction with qualitative serum assays of the beta subunit of human chorionic gonadotropin (ß-hCG), allows detection of earlier and smaller ectopic pregnancies (***Winder et al., 2011).***

Magnetic resonance imaging is useful. If US is not able to determine the location of a pregnancy and when sonographic diagnosis is unclear, here comes the role of MRI. Examples of this include differentiating an intrauterine pregnancy (IUP) from a cervical or interstitial pregnancy, or determining the anatomic relationships of an abdominal pregnancy (***Tannwald &Oto, 2013).***

Radiology residents are commonly taught to suspect ectopic pregnancy at color Doppler imaging when the "ring of fire" is visualized, owing to the low impedance high diastolic flow seen in pregnancy that can surround the tubal ring of an ectopic pregnancy (***Kupesic, 2011).***

CT scan findings are nonspecific for ectopic pregnancy. Though sometimes used, the associated ionizing radiation poses a hazard if a normal intrauterine pregnancy is present. Still yet, it's typically not an appropriate imaging modality to

be used for the analysis of ectopic pregnancy (***Febronio, 2012).***

Interventional radiology offers options including chemical injection of an ectopic gestational sac, uterine artery embolization, aspiration and drainage, percutaneous nephrostomy, and suprapubic cystostomy catheter placement. Interventional radiologists play a critical role in treating complications such as tubal or uterine rupture, depending on the location of the pregnancy, which could lead to massive hemorrhage, shock, disseminated intravascular coagulopathy (DIC), and death (***Thabet et al., 2012).***

Aim of The Work

This essay is designed to emphasize the role of different imaging techniques in diagnosis and management of ectopic pregnancy with a trial to highlight the role if interventional radiologist in these critical cases.