# COMPARATIVE STUDY BETWEEN 3D ULTRASOUND AND HYSTEROSCOPY IN ASSESSMENT OF ABNORMAL UTERINE BLEEDING & PAIN ASSOCIATED WITH IUD

## Thesis

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| | | |
|---|---|---|
| 2D | : | Two-dimensional ultrasound |
| 3D | : | Three-dimensional ultrasound |
| AIDS | : | Acquired immune deficiency syndrome |
| ECO | : | External cervical os |
| ICO | : | Internal cervical os |
| IUCD | : | Intrauterine contraceptive device |
| PID | : | Pelvic inflammatory disease |
| STDs | : | Sexually transmitted diseases |
| THB | : | Targeted hysteroscopic biopsies |
| TVS | : | Transvaginal cervical os |
| U/S | : | Ultrasound |
| VCI-C | : | Volume contrast imaging in the coronal plane |

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# ABSTRACT

According to the results of this study. It was found that the majority of cases complaining of pain & bleeding with IUD have well placed IUD thus there is no doubt that the cause of bleeding in IUD users in those cases do not correlate with the position of the IUD. IUCD presence, per say, regardless its position in the uterine cavity can cause menorrhagia. ***3D*** coronal view of the uterus may be an important part of the gynecological ultrasound examination in any patient with an IUCD. Producing a coronal view of the IUCD that show the entire device and its position within the uterus may help to explain pelvic pain and bleeding in patients with malpositioned IUCDs. Also it allows better reliability in detecting abnormalities in endometrial cavity such as polyps, submucous myomas, adenomyosis & any adenexial masses such as ovarian cysts.which was found to be the cause of bleeding & pain with IUCD in many cases. 3D U/S can guide the patient & the gynecologist to do other procedures specially in cases of Persistent bleeding & pain with IUCD and the 3D U/S was normal or showing a focal lesion in the endometrial cavity. Hysteroscope act as a complementary method to 3D U/S in absence of any other causes of abnormal uterine bleeding & pain with IUCD diagnosed by 3D U/S. However, since the sample number is small, it might be difficult to confirm these results and give recommendations upon them. It is also proposed that further research would be done on this topic to confirm or negate these results.

**Keywords:**

Ultrasound
Hysteroscopy
Uterine bleeding
Pain associated with IUD

# INTRODUCTION

# INTRODUCTION

The first use of the intrauterine contraceptive device (IUCD) was assigned to caravan drivers who used the intrauterine stones to prevent pregnancies in their camels during long journeys ***(Speroff, 2005)***. IUCD is the most widely used contraceptive method in the world. In 1995, it was reported that IUCDs were used by over than 100 million women all over the world, and is considered the second reliable method of contraception after oral hormonal contraceptives ***(O'Brien et al., 2008)***. Prevalence rates range among different countries is from 2 to 80% of contraceptive users ***(ESHRE Capri, 2009).***

Excessive bleeding is the main presenting complaint in women referred to gynecologists and between 5 to 15% of women will have their IUCDs removed because of bleeding *(**Speroff, 2005**).*

Transvaginal ultrasound *(*TVS) is the imaging technique of choice as a first line investigation of endometrial abnormalities being a possible cause of abnormal uterine bleeding ***(Leone et al., 2007).***

Imaging: Specifically sonography has a crucial role in the evaluation and management of IUCDs and associated complications, including dislocation to low position, associated infection, myometrial migration, uterine perforation, intrauterine or extrauterine pregnancy associated with the IUCD and retention and fragmentation of the IUCD ***(Peri et al., 2007).*** IT has been reported that the position of the IUCD is related to the occurrence of bleeding and pain, by using transvaginal ultrasound (TVS) it has been possible to identify the

distance between the upper end of the IUCD and the uterine fundus ***(Kuwata et al., 2005).***

Three-dimensional (3D) ultrasound in gynecology is a new imaging modality which is being introduced in clinical practice. Although this technique is unlikely to replace the two-dimensional (2D) ultrasound, it is being increasingly used since it has been reported that 3D ultrasound is a high reproducible technique which has many applications in the field of gynecology ***(Valsky et al., 2006).***

3D ultrasound provides useful information on the location of the IUCD following insertion. It enables imaging of the entire IUCD, i.e. the shaft and the arms, simultaneously ***(Lee et al., 1997)***.

Hysteroscopy permits direct visualization of cervical canal and uterine cavity. Diagnostic hysteroscopy is accurate in diagnosis of intra uterine abnormalities. As diagnostic hysteroscopy is predominantly performed in the out patient clinic, thereby an accurate diagnosis can be reached in the same setting which is important to direct treatment of any specific pathology and avoid needless surgery. More over, it may contribute to prognosis of expected quality of life ***(Van Dangen et al., 2007).***

Persistent IUCD induced bleeding requires definitive diagnosis and treatment. Removal of the device, sometimes, is not the proper approach. It is of great value to perform hysteroscopy for IUCD users with bleeding to evaluate the IUCD fitting in the uterine cavity and to

detect any displacement whether downwards or lateral. Hysterosocopy is also beneficial for proper screening of the cervical canal, endometrial surface and the uterine cavity for visible pathology and/or anomaly. Uterine curettage should be done, preferably after removal of the device, in cases with persistent and/or excessive IUCD induced bleeding for accurate pathological diagnosis **(*Aboul Nasr et al., 1996***).

# AIM OF THE WORK

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The aim of the present work is to compare between three dimensional ultrasound (3D U/S) and hysteroscopy in assessment of pain and irregular uterine bleeding in IUCD users, and to assess the efficacy of these methods in detecting possible endometrial and IUCD abnormalities.