Summary

Abnormal uterine bleeding is one of the commonest female complains in all the different age groups. Reaching the proper diagnosis is a challenge and it's important to limit the diagnostic methods as much as possible to avoid unnecessary interventions and costs.

The introduction of intrauterine endoscopy has allowed clinicians to evaluate an area of the body that was previously accessible only by the procedure of blind dilatation and curettage. The use of hysteroscopy has been most common in the evaluation of abnormal uterine bleeding.

Ideally, a non-invasive investigation is preferred over an invasive one and also an economical investigation preferred over an expensive one; this applies equally to affluent countries and third world., that's why ultrasonography by any modality is considered to a non-invasive procedure to investigate uterine lesions rather than hysteroscopy which is a highly invasive one with a high cost.

Saline infusion sonography is a relatively new diagnostic technique, in which the uterine cavity is distended thereby enabling the visualization of endometrial surface. SIS was a reliable and accurate method for investigations of the endometrium and uterine cavity. It provides correlative data with histological results as good as more invasive procedures. It can be a good alternative technique for the evaluation of uterine cavity abnormalities. Furthermore, SIS may be a valuable measure in extreme comorbid patients with higher intervention risk or in patients who do not want a hysteroscopic procedure.

Three-dimensional U/S, when performed with saline infusion, can yield additional useful information about the uterus, the endometrial cavity, and lesions that may occur within. It provides detailed information of the internal and external contours of the uterus, obviating the need to perform surgery for diagnosis alone. There is better depiction of endometrial lesion location. More recently, a 3D sonographic inversion rendering was introduced that converts

anechoic voxels to echogenic ones. Fluid-filled structures are made echogenic and displayed in three dimensions. With this technique, a digital "cast" of the endometrial cavity may be made and further studied .

Three-dimensional SIS can better visualize the uterine cavity and endometrial pedicle thickness of polyps than can trans-vaginal sonography or 2DSIS. Using the multiplanar views, polypoid structures can be clearly visualized allowing for the optimal plane to present their pedicle.

This study aimed to assess the diagnostic accuracy of 3DSIS in cases of abnormal uterine bleeding.

The present study included 100 patients admitted to Benha University hospital, department of Obstetrics and Gynecology with AUB in the period from September 2009 to September 2011.

Different patterns of AUB were observed in the study group as shown in table (2). 38cases(38%) were complaining of menorrhagia, 24 cases (24%) were complaining of menomettorrhagia, 17 cases (17%) were complaining of polymenorrhia, 15 cases(15%) were complaining of intermenstrual bleeding and 6 cases (6%) were complaining of post-menopausal bleeding.

In this study, 100 women complaining of abnormal uterine bleeding underwent both 3DSIS and diagnostic hysteroscopy and we found that both methods agreed in 86 cases (27 cases were free, 59 cases had positive findings), while disagreed in 14 cases. DHS was able to diagnose 3 cases of endometrial polyps missed by 3DSIS, while 3DSIS was able to detect 3 cases of endometrial polyps, 2 cases of submucous myoma and 6 cases of thick endometrium missed by hysteroscopy as shown in tables (12 and 13).

As regards diagnosis of endometrial polypi, 3DSIS has detected polypi in 30 cases out of 100 cases of the study while DHS has detected polypi in 29 cases of the study group.

As regards the diagnosis of submucous myomas, 3DSIS has detected myomas in 24 cases while DHS has detected myomas in 20 cases of the study group.

D & C biopsy was performed for all patients. According to histopathological diagnosis, cases were classified into four major groups including, normal endometrium, endometrial hyperplasia, endometrial atrophy and endometrial carcinoma.

histopathology was taken as a gold standard for diagnosis.

Regarding cases of endometrial polyp, sensitivity, specificity, +ve predictive value , –ve predictive value and accuracy for 3DSIS were 93.75%, 100%, 100% , 97.14% and 98% respectively and for DHS were 90.62%, 100%, 100%,95.77 and 97% respectively as shown in tables (18 and 19) .

Regarding cases of submucous myoma, sensitivity, specificity, +ve predictive value , –ve predictive value and acccuracy for 3DSIS were 100%, 93.83%, 79.17%, 100% and 95% respectively and for DHS were 100%, 98.77%, 95% ,100% and 99% respectively as shown in tables (18 and 19).

Regarding cases of endometrial hyperplasia, sensitivity, specificity, +ve predictive value , –ve predictive value and accuracy for SIS were 61.11%, 100%, 100% 92.13% and 93% respectively and for DHS were 44.44%, 100%, 100%, 89.13% and 90% respectively as shown in tables (18 and 19).

Three-dimensional SIS is a reliable and accurate method for investigations of the endometrium and uterine cavity. It provides correlative data with histological results as good as more invasive procedures. It can be a good alternative technique for the evaluation of uterine cavity abnormalities.