

Findings of Endometrial Wall Using Ultrasonography

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Background: Endometrial wall thickness is a commonly measured parameter on routine gynecological ultrasound. Its clinical importance and applications extend throughout the phases of the reproductive lives of women. It is often considered an indicator of many diseases such as endometrial carcinoma or hormonal changes. The study aimed to assess and characterize endometrium wall using ultrasound.

Material and Method: Descriptive, cross sectional study has been applied on 54 female patients. Within the age range from 10 to 70 years old. The patients were divided into sixth age groups (10-20, 21-30, 31-40, 41-50, 51 to 60 and 61-70 years old). Frequency distribution was then calculated using SPSS program.

Results: The most presentation was 43(79.6%) of premenopausal females, 6 pregnant females (11.1%), while 5 were postmenopausal females (9.3%). The study found that 25 women with normal endometrium thickness (46.3%) and 29 with an abnormal thickness (53.7%). 37 (68.5%) had a hyperechoic endometrium, while 17(31.5%) had a hypoechoic endometrium. The study revealed(90.7%) had a homogenous echo texture while only (9.3%) had a heterogeneous echo texture the study noted that there was a detectable amount of free fluid oncul du sac on(37%) while not detected on (63%)of sample population.

ultrasound can provide an alternative noninvasive methods for assessing and evaluation of endometrium, it is highly sensitive and easy to perform by expert personals.

Keywords: Endometrium thickness; Echogenicity ; Echotexture.

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I. Introduction

Measurement of endometrial wall thickness with ultrasonography is a modality commonly used today. Its clinical importance and applications extend throughout the phases of the reproductive lives of women. In premenopausal women, endometrial thickness is used to monitor infertility treatment, while in postmenopausal women with abnormal uterine bleeding it is useful as an initial investigation for endometrial hyperplasia or cancer. Moreover, endometrial thickness can vary with the menstrual cycle and with the use of hormone replacement therapy or selective estrogen receptor modulator (Ronkin, Northington et al. 2005). With the development and clinical application of transvaginal transducers/probes (TVS) the sonographic imaging of the endometrium was greatly enhanced compared with abdominal ultrasound. Also, the discomfort of a full bladder associated with abdominal ultrasound could be avoided. A shorter distance between probe and target allowed the use of higher frequency transducers, thereby achieving improved imaging (Bourne, Hamberger et al. 1997). Transvaginal ultrasound is a useful modality that can usually be completed without much discomfort as an initial visual investigation for abnormal uterine bleeding (Dueholm and Hjorth 2017). This study aimed to assess and characterize endometrium wall thickness using ultrasound.

II. Material And Method

Descriptive, cross sectional study has been applied on 54 female patients with age range from 10-70 years were underwent successful pelvic ultrasound examination with ACUSONX300 and Vuluson E6 ultrasound machine with low frequency curve linear probe 3-5MHZ and high frequency transvaginal probe 7 MHZ which are typically used. Only female patient underwent ultrasound procedure using B- mode and Doppler ultrasound were included.

This study was conducted in the period from February 2019 to April 2019 in Mohammed Aldossary Hospital K.S.A.

The endometrium has been assessed in long axis or sagittal plane ideally on transvaginal scanning, with the entirety of the endometrial lining through to the endocervical canal in view with the patient in lithotomy position, after taking a Medical history of all study subject directly from participants themselves. Whereas the patient on supine position the transabdominal scan is performed with sagittal and transverse planes. Then the frequency distribution of the ultrasound variability was calculated and then all frequency distribution was presented.

III. Results

Table 1: Showed frequency distribution of women status

Women status	Frequency	Percent
Pregnant	6	11.1
Premenopausal	43	79.6
Postmenopausal	5	9.3
Total	54	100

Table 2: Showed the endometrium findings

Endometrium findings	Frequency	Percent
Normal findings	26	48.1
Abnormal findings	28	51.9
Total	54	100

Table 3: Describe endometrium thickness

Endometrium abnormality	Frequency	Percent
Normal wall	25	46.3
Thick wall	29	53.7
Total	54	100

Table 4: Showed the frequency distribution of echogenicity

Echogenicity	Frequency	Percent
Hyperechoic	37	68.5
Hypoechoic	17	31.5
Total	54	100

Table 5: Showed the frequency distribution of echo texture

Echo texture	Frequency	Percent
Homogenous	49	90.7
Heterogeneous	5	9.3
Total	54	100

Table 6: Showed the presence of free fluid at cul du sac

Free Fluid	Frequency	Percent
Yes	20	37
No	34	63
Total	54	100

IV. Discussion

A total of 54 female patients were conducted in this study; 6 were pregnant (11.1%) while 43 were premenopausal (79.6%) and only 5 were postmenopausal (9.3%)(table.1); according to endometrium findings 26 had a normal features (48.1%) instate of 28 which had an abnormal features (51.9%)(table.2); according to endometrium thickness most of them (29) had a thick wall (53.7%) while others had a normal thickness (46.3%)(table.3); according to echogenicity 37 (68.5%) had a hyperechoic endometrium, while 17(31.5%) had a hypoechoic endometrium(table.4); according to echo texture 49 had a homogenous echo texture (90.7%) while only 5 had a heterogeneous echo texture(9.3%)(table.5); according to the presence of free fluid in cul du sac there was a detectable amount of free fluid on 20 of sample population(37%) while not detected on 34 of sample population(63%)(table.6).

V. Conclusion

From the frequency distribution mentioned here this study reveals that ultrasound can provide an alternative noninvasive methods for assessing and evaluation of endometrium thickness as well as Transvaginal/Transabdominal ultrasound is superior to the detection of endometrial thickness; it is highly sensitive and easy to perform by expert personals.

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