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Original article

WHEN THICKNESS MATTERS: THE IMPORTACE OF ENDOMETRIAL THICKNESS MEASUREMENT IN PATIENTS WITH INTRAUTERINE FLUID COLLECTION

Skeparovska Kristina[1,2], Palchevska Eva[2], Verushevska Elena[1,2], Topencharova Paunkoska Jovana[2], Tanevska Tamara[2]

[1]University Clinic for Gynecology and Obstetrics - Skopje, Republic of North Macedonia
[2]Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia
e-mail: kristina_skeparovska@yahoo.com

Abstract

Numerous patients are referred by their gynecologists for a histological evaluation due to an ultrasound finding of "mucometra" (intrauterine fluid collection) without endometrial thickness being measured and reported. It seems that for a large number of doctors, intrauterine fluid collection by itself rather than the thickness of the endometrium is of significance when suspecting a possible pathology of the uterus.

The aim of this study was to assess the histological significance of intrauterine fluid collection as such *versus* intrauterine fluid collection accompanied by endometrial thickness.

The study was retrospective. It included 98 postmenopausal patients with sonographically confirmed mucometra that underwent dilatation and curettage. Subjects were divided in 3 groups: patients with mucometra; patients with mucometra and endometrial thickness >10 mm and patients with mucometra and endometrial thickness ≤10 mm. Data regarding histological findings were obtained from medical history.

Behind TVS finding of "mucometra" regardless of endometrial thickness presence, histopathology analysis revealed 84.6% atrophic endometrium, 12.8% benign, and 2.6% premalignant or malignant lesion.

Among patients with endometrial thickness up to 10 mm, atrophic endometrium was found in 80%, and 20% of patients had benign findings. Patients with endometrial thickness above 10 mm had premalignant or malignant lesion in 11%, benign lesion in 21%, and the remaining 68% had atrophic endometrium.

Endometrial thickness rather than intrauterine fluid accumulation itself is crucial in making the decision for further histological evaluation.

Keywords: intrauterine fluid collection, mucometra, endometrial thickness, malignant lesion

Introduction

The occurrence of an endometrial carcinoma in the presence of an intrauterine cavity fluid collection (sero- or mucometra) has been discussed controversially in the literature[1]. In the past, it was thought that the intrauterine fluid collection was an ominous sign often associated with endometrial malignancy[2]. On the other hand, not every postmenopausal woman with intrauterine

cavity fluid collection will likely have endometrial carcinoma[3]. The importance of measuring the endometrial thickness when intrauterine fluid collection is seen by sonography, not just measuring the fluid collection itself, was emphasized[4].

In our country, numerous patients are referred by their gynecologists for a further histological evaluation due to an ultrasound finding of mucometra without endometrial thickness being measured and reported. It seems that for a large number of doctors, intrauterine fluid collection by itself rather than the thickness of the endometrium is of significance when suspecting a possible pathology of the uterus. The aim of this study was to determine the proportion of those doctors, as well as the histological significance of intrauterine fluid collection as such *versus* intrauterine fluid collection accompanied by endometrial thickness.

Methods and materials

Over a two-year period (January 2022 - December 2023), 98 postmenopausal patients with intrauterine fluid collection were admitted at the University Clinic for Obstetrics and Gynecology in Skopje, North Macedonia for further evaluation. All subjects were divided in three groups: the first one included all patients with intrauterine fluid collection regardless of whether endometrial thickness (ET) was measured or its value, the second group comprised patients with ET≤10 mm and the third was represented by patients with ET>10 mm.

The subjects underwent dilatation and curettage (D&C) in order to obtain a tissue sample for histopathological analysis (HPA). The HPA results were collected from medical history retrospectively.

Results

A total of 98 postmenopausal women aged between 51 and 83 years were included in this study. Among them, only 10 did not have comorbidities such as hypertension, heart failure, diabetes, thrombosis or obesity.

During the pre-admission evaluation, 61 of 98 patients had an ultrasound scan (USS) report that included ET measurement. Thirty-seven of them did not have such a report (Figure 1).

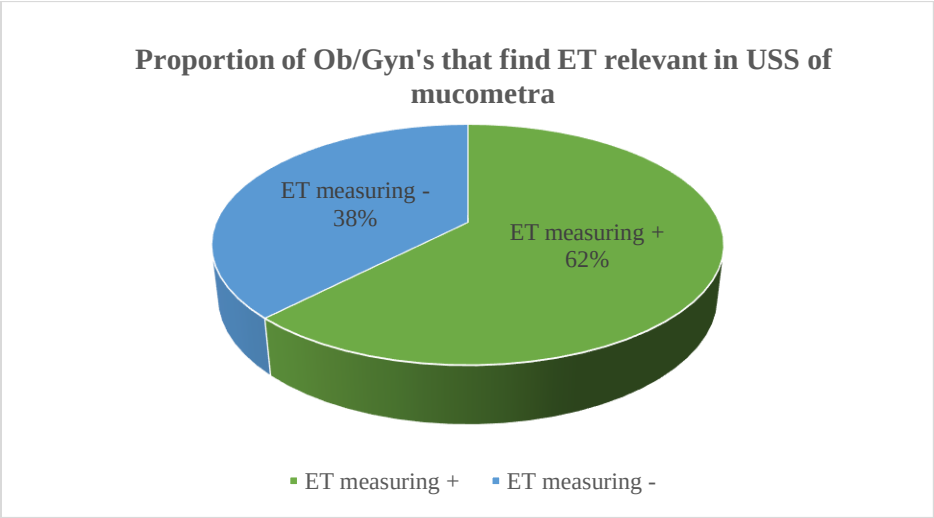

Fig 1. Proportion of Ob/Gyn's with ET measuring during USS of intrauterine fluid collection

All patients underwent D&C, but 20% of them remained undiagnosed. In 1/3 of them the cause was obliteration of the cervix which did not allow to enter the uterine cavity, and in 2/3 of them, the obtained endometrial tissue was insufficient for HPA. The remaining 78 women (79.59%) got the HP diagnosis (Figure 2).

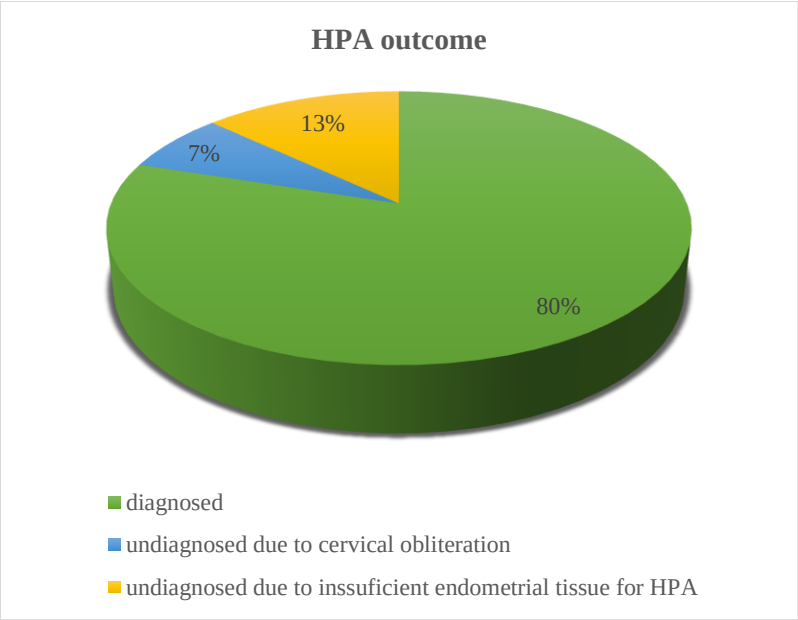

Fig. 2. HPA outcome

We categorized all HPA findings into 3 groups according to the histological characteristics of the tissue: an atrophic or inactive endometrium, benign findings (endometrial polyps and endometrial hyperplasia without atypia) and precancerous and cancerous lesions (endometrial hyperplasia with atypia and endometrial cancer).

Then, the distribution of HPA diagnosis in all three groups of patients was analyzed (Figure 3).

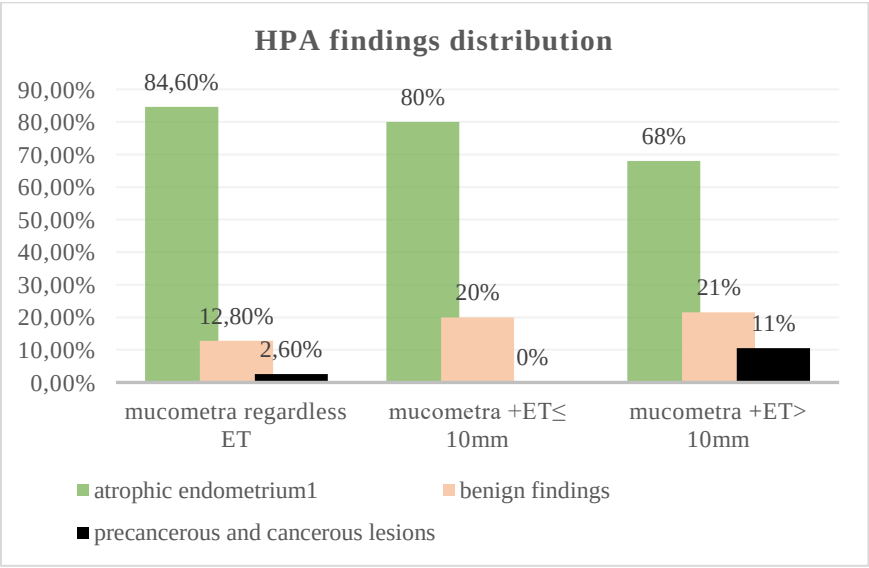

Fig. 3. Distribution of HPA findings

In patients with an ultrasound finding of mucometra without accompanying endometrial thickness measurement, histopathological analysis showed the presence of atrophic endometrium in 84.6% of cases, a benign finding in 12.8%, and a finding of premalignant or malignant lesions in 2.6% of cases.

When stratifying the groups according to the thickness of the endometrium, in the group of patients with a thickness of up to 10 mm, 80% of patients had an atrophic endometrium, and 20% had a benign finding. In the group of patients with endometrial thickness over 10 mm, 68% had atrophic endometrium, 21% had a benign finding, and 11% had a premalignant or malignant lesion.

Discussion

Every third gynecologist is not aware of the importance of measuring the thickness of the endometrium during the ultrasonographic finding of an intrauterine fluid collection. This non-selective approach to histological examination shows that only 2.6% of women have a premalignant or malignant lesion in the examined material. This percentage increases fivefold (11%) when the mucometra is accompanied by thickening of the endometrium over 10 mm. This means that every 10th woman with such endometrial thickness has a premalignant or malignant lesion. Furthermore, in the patient pool for this article, no patient with endometrial thickness up to 10 mm had a premalignant or malignant lesion.

Findings in the literature speak more to the negative predictive value of thin endometrium than to the positive predictive value of thickened endometrium. Goldstein[5] did a study on 30 postmenopausal women with thickness of the tissue surrounding an endometrial fluid collection on vaginal probe ultrasound and concluded that if the endometrial tissue is thin (3 mm or less), the endometrium is most probably inactive and sampling is not necessary. However, if the peripheral endometrium is thicker than 3 mm, sampling is mandatory because the tissue cannot be expected to be inactive. Zalel *et al.*[6] diagnosed endometrial cancer in one out of nine asymptomatic patients with an incidental finding of fluid collection. This woman had an ET of 3 mm (two endometrial layers). Pardo *et al*.[7] found two cases of endometrial cancer when the ET was >4 mm (one layer) out of 20 asymptomatic patients with intra-uterine fluid accumulation.

Analyzing the results of our study, the question arose as to whether patients were over-treated. Considering the obtained results, it is more than clear that a standardized protocol is needed for the approach to patients with diagnosed intrauterine fluid collection.

Furthermore, in 20% of the cases D&C procedure was unsuccessful, either because of the impossibility to dilate the cervical canal, or because of the obtaining insufficient material for interpretation. So, every fifth woman was exposed to the risks of anesthesia and the risk of performing the intervention itself, without any benefit from it. This becomes especially important if you take into account the fact that most women with a mucometer finding are postmenopausal women with already existing comorbidities such as hypertension, diabetes, obesity.

Conclusion

Measurement of ET is mandatory in the evaluation of intrauterine fluid collection. The greater the thickness of the endometrium - the greater the concern for the existence of premalignant and malignant lesions. Non-selective D&C for histological evaluation of intrauterine fluid collection is unacceptable given the risk it carries.

Conflict of interest statement. The authors declare no conflict of interest.

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