Vaginosonography in primary prevention of endometrial oncological pathology

G. GHIRARDINI - R. MONTANARI - C. GUALERZI

Summary: In 38 patients observed for postmenopausal bleeding endometrial thickness measured by vaginosonography before diagnostic curettage was compared with histological results. In 30 patients with endometrial thickness below 4 mm only inactive endometrium was found, whereas in 8 patients with endometrial thickness above 4 mm different pathologies were present. The role of vaginosonography in primary prevention of endometrial oncology is dicussed.

Key words: oncology; endometrium; primary prevention.

INTRODUCTION

The incidence of endometrial carcinoma is continuously increasing in developed countries. This is due to many factors and among them: 1) aging population; 2) better nutrition; 3) reduced number of pregnancies. In most cases it is a pathology of the postmenopausal age, with a peak incidence at about 60 years. Advance in knowledge of cancer of the endometrium has been impeded by several persistent concepts and mainly: 1) that endometrial cancer is always a relatively benign malignancy, easily cured; 2) that women will report postmenopausal bleeding promptly. The result is persistent discussion as to the possible therapeutical options.

Early diagnosis of endometrial carcinomas is therefore of the utmost clinical importance for achieving primary prevention (diagnosis before symptoms) of this neoplasia. The available methods of screening such as endometrial cytology and hysteroscopy, are not fully satisfactory. It is therefore mandatory, before the end of the century, that we develop a method of screening with the following characteristics: 1) accepted by the patients; 2) without complications; 3) at low cost; 4) effective in detection of carcinoma and its precursors.

To this end we tested the possibility of vaginal sonography to be used as a screening method for endometrial oncology in postmenopausal age.

MATERIALS

All patients observed for postmenopausal bleeding in our Division (amenorrhea for at least 2 years) between January and September 1990 were considered. Patients receiving hormonal replacement therapy were excluded. A total of 38 patients was considered.

METHODS

All patients underwent first vaginosonographic examination with empty bladder. We used a 5.0 MHz vaginal transducer with a 240° angle (Combison 320.5, Kretz, Austria), The maxi-

Department of Obstetrics and Gynaecology
Franchini Hospital
Montecchio Emilia (RE)

mum endometrial thickness in the longitudinal plane was recorded. In cases where the endometrial surfaces were opposed the total thickness was measured and then divided by two, as proposed by Osmers *et al.* [1, 2]. All patients thereafter underwent hysteroscopy, immediately before curettage, under general anaesthesia. A Wolf hysteroscope with panoramic vision was used. Hysteroscopy was performed to 1) compare and control the vaginosonographic picture; 2) to localize suspected areas. In cases of carcinoma we did not, on purpose, take into consideration myometrial invasion, because we were dealing only with early detection possibilities.

RESULTS

Following the method proposed by Osmers *et al.* [1, 2] the patients were divided into two groups: 1) patients with endometrial thickness above 4 mm and 2) patients with endometrial thickness below 4 mm. Eight patients were allocated the first group and 30 to the second. In Table 1 the histological results compared with the endometrial thickness in the first group are reported. In Table 2 the histological results are indicated in patients with endometrial thickness below 4 mm. In all cases the hysteroscopic picture was comparable with histology.

Table 1. – *Endometrial thickness above 4 mm and endometrial pathology.*

Case No.	Histology	Endometrial thickness (mm)
1	adenocarcinoma	18
2	adenocarcinoma	13
3	adenocarcinoma	9
4	adenomatous hyperplasia	10
5	adenocarcinoma	9
6	persistent proliferative end.	11 (ovarian tumour)
7	endometrial polyp	10
8	adenocarcinoma	14

Table 2. – *Endometrial thickness below 4 mm and histological results.*

	No.
No material	10
Necrotic menstrual endometrium	3
Hypotrophic endometrium	4
Atrophic endometrium	13

DISCUSSION

Up to now the proposed methods for early detection of endometrial oncological pathology cannot be widely applied have high costs and must be considered as invasive methods. For these reasons too, primary prevention is rarely possible. Hysteroscopy, for these same reasons, is a procedure more appropriate for evaluating localization and extent of the neoplastic disease than a method of primary prevention [3]. Transabdominal sonography, a noninvasive method, presents physical and practical limits for early detection of endometrial oncology (low resolution, distance between transducer and endometrium, particularly in obese patients at high risk for this pathology, difficulty in obtaining a full bladder for examination in postomenopausal age). Few works deal with transabdominal ultrasound and endometrial pathology, mainly evaluating advanced neoplastic cases and not the possibility of early detection [4, 5].

With the publication of the volume " Gynäkologische Endosonographie " in 1986 Popp [6] opened a new era in the diagnosis and therapy of female pelvic pathology. Vaginal sonography allows a clear and easy visualization of the endometrium, with a resolution power below 1 mm. Using this method we tried to test a possible correlation in postmenopausal age between endometrial thickness and oncologic pathology. Considering that a normal endometrium in reproductive age reaches a maximum of about 7 mm thickness [7] and that a postmenopausal endometrium rarely exceeds 1 mm in histological preparations, a cut-off of 4 mm endo-

metrial thickness recorded in vivo by vaginal sonography appears justified for distinguishing between a normal postemenopausal and a suspected endometrium requiring further evaluations.

In the group with endometrial thickness below 4 mm we did not find any oncologic pathology, whereas in the group with endometrial thickness above 4 mm different pathologies were present. It is noteworthy that in cases of carcinoma the minimum endometrial thickness exceeded the maximum thickness of a normal secretive endometrium in reproductive age (Table 1). Our data are in accordance with those of literature ([1, 2]).

CONCLUSIONS

Although the available data are limited ([1, 2]), they indicate a possible role for vaginal sonography as a screening method for the primary prevention of endometrial oncology. It is obvious that vaginal sonography presents excellent characteristics as a screening method, it is: 1) accepted by the patient; 2) rapidly performed; 3) of easy interpretation; 4) without adverse effects; 5) it detects precursors; 6) it detects carcinoma.

Investigations on larger numbers are, of course, required to confirm this possibility and to calculate the sensitivity and specificity of the method. If confirmed we could have a real possibility for primary prevention of endometrial carcinoma and a better knowledge of the natural history of this cancer.

REFERENCES

1) Osmers R., Völksen M., Roth W., Teichman A., Kuhn W.: "Vaginosonographische Messungen des postmenopausalen Endometriums zur Früherkennung des Endometriumskarzinoms". *Geburts. u. Frauenheilk., 49,* 262, 1989.
2) Osmers R., Völksen M., Schauer A.: "Vaginosonography for early detection of endometrial carcinoma?". Lancet I, 1569, 1990.
3) La Sala G. B., Dessanti L., Sacchetti F.: "Panoramic diagnostic microhysteroscopy: analysis of results obtained from 976 outpatients". *Acta Obst. Gyn. Scand. Suppl., 141,* 1987.
4) Chambers C. B., Unis J. S.: "Ultrasonographic evidence of uterine malignancy in the postmenopausal uterus". *Am. J. Obst. Gyn., 154,* 1194, 1985.
5) Nasri M. N., Coast G. J.: "Correlation of ultrasound findings and endometrial histopathology in postmenopausal women". *Br. J. Obst. Gyn., 96,* 1333, 1989.
6) Popp L. W.: "Gynäkologische Endosonographie". *Ingo Klemke Verlag, Quickborn,* 1986.
7) Lenz S., Lindenberg S.: "Ultrasonic evaluation of endometrial growth in women with normal cycles during spontaneous and stimulated cycles". *Hum. Reprod., 5,* 377, 1990.

Address reprint requests to:
G. GHIRARDINI
Department of Obstetrics and Gynaecology
Franchini Hospital
Montecchio Emilia
Reggio Emilia (Italy)