

Simultaneous combined ultrasound and gynaecological examination for a more indepth clinical diagnosis

A personal practice

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Ultrasound technique advances in the last twenty years have been impressive, particularly in obstetrics and gynaecology, because of the non-invasive, harmless and cheaper imaging diagnostic means.

Abdomino-pelvic and/or transvaginal sonography in almost every female genital physio-pathological state are routine today.

In our own experience nowadays sonography is no longer only a simple imaging diagnostic means but it has begun to be a *simultaneous useful integration of the clinical examination*, allowing in this way a more precise diagnosis.

In this field we have had a great deal of experience, in the last ten years, reaching in every case – even in obese women – a precise evaluation of the genito-pelvic situation and consequently and exact diagnosis also in outpatient consultations (1).

In our opinion this is today the best way, in routine gynecologic semeiotics, to

feel and also see any physiopathological modifications of the internal genital tract, particularly allowing the detection of ovarian diseases, even early malignancy.

We believe that also nowadays, and mandatory in the near future, every gynecologist must be skilled in first level abdominal and/or transvaginal ultrasound investigation in his professional practice.

Second level diagnosis, particularly for pitfalls and keyfinding of fetal anomalies, must be reserved to skilled ultrasound specialists and experts. We agree with Arger's consideration (8) about accreditation programs comprising obstetricians and gynecologists because "the accreditation process a thorough comprehensive self-evaluation that may identify specific strengths and weaknesses of a practice".

We began our experience many years ago in this new semeiotic way of simultaneous, physical and ultrasonographic examination in gynecology, starting with our program of "contemporaneous global screening of female genital cancers".

Our clinical experiences were fascinating from the beginning not only for the possibility to perform a complete multifaceted diagnosis by the same gynecologist, at the same time, in the same out-

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patient office, but also for the quality of a simple, non-invasive and accurate diagnosis.

In the "global screening for gynecological cancers" we proposed^(2,3,4) an integrated clinical and ultrasound examination allowing for a better control of the breast, uterus, – endometrial picture – and ovary and for the complete pelvic topographic situation (bladder, bowel, rectum, free-fluid etc.).

We believe that nowadays the gynecologist must be able, by ultrasonography, to perform a simultaneously combined abdomino-pelvic and mammarian examination.

As is well known, in women under 40, diagnosis of breast diseases by ultrasonography, integrated with clinical examination, is very important and mammography should be reserved for selected cases.

TECHNIQUE

Following our philosophy and experience the modern gynecological office should always have ultrasound equipment for basic practice in breast and abdomino-pelvic examination – better if integrated with a vaginal transducer – like it should also have colposcopic and microscopic equipment.

The gynecologist can perform the clinical examination of the patients lying like always on the gynecological exam table, with the legs open in the stirrups, by vaginal exploration under concurrent trans-abdominal ultrasound examination, done by himself or by ultrasound specialist or expert. Bimanual palpation of the internal female and pelvic organs (uterus, ovaries, adnexial structures, Douglas pouch, bladder) is possible also with an abdominal transducer or using the same abdominal transducer like the external hand.

In this way the gynecologist can view in the monitor what he is also palpating

in the pelvis and feeling with his own hands.

He can target by monitor imaging, with his own finger, the normal pathological pelvic structures, check the physiopathological morphology of the salpinges, ovaries, endometrium, and so on.

Transvaginal ultrasonography (TUS) is an easy method to determine the morphopathological situation and condition of the internal female genitalia and pelvic organs.

The duration of combined ultrasound clinical examination is a little longer than a normal gynecological consultation but allows a more complete and exact diagnosis, with the best comfort for the patient who is not obliged to undergo other consultations. Only in particular cases is a second level ultrasound examination necessary, particularly in the obstetrics field for fetal morphologic evaluation.

DISCUSSION AND CONSIDERATIONS

In our practice we have applied a contemporaneous ultrasound and vaginal – or rectal – examination in every patient under gynecologic or obstetric care, obtaining the most precise combined clinical imaging diagnosis and often saving time and money for the patient.

In *Gynecology* this technique affords easy evaluation of non-pregnant uterus and ovaries and individualization of gynecological diseases. Uterine leiomyomas and their subserous-myometrial and/or submucous – can be localized in the uterine corpus or cervix and are defined by volume and diameter.

Ovarian cysts and/or adnexial masses can be evaluated by their morphological aspects, mobility and topographic relation with neighbouring organs.

Endometriosis and/or inflammatory diseases can be assessed in their localization and extension in the pelvic and adnexial structures or in the Douglas pouch.

Uterine volume, morphology, position, possible malformations and the anatomical relation with the bladder and rectum concurrently may be seen and felt.

The endometrial situation may be checked, particularly for enlarged thickness, poliposis, eventual malignancy and the same for cervical and endocervical pathology and so on.

The systematic ultrasound exam in the gynecological office consultation is basic also in the treatment of infertility for spontaneous ovulation monitoring or during ovulation induction to evaluate ovarian response to treatments, to diagnose the luteinized unrupted follicle syndrome, for intrauterine fertilization etc.

In our opinion, in office practice, the screening of the ovary and endometrium for neoplastic disease, particularly in the perimenopausal and postmenopausal period should be stressed.

Ultrasonography and particularly transvaginal ultrasonography has an important role in the daily practice of the gynecologist in prevention and early detection of ovarian malignancies. Because bimanual pelvic examination is such an inaccurate technique transvaginal ultrasonography represents an easy method of early diagnosis to distinguish benign, common cysts from malignancies.

With high-resolution sonograms that use Doppler-flow technology, diagnosis of an early ovarian malignancy (very small stage 1a tumors) is quite accurate. Accuracy of this technique should be better than 99.1% and accuracy of 99.9% has been reported to be achievable⁽⁵⁾ while CA 125, because of the lack of specificity is not a good screening test for ovarian cancer⁽⁶⁾.

The cost effectiveness of screening or early detection for ovarian cancer with CA 125 is very low⁽³⁾ while, with ultrasonography it is very high, particularly in combined gynecological examination.

Malignant epithelial ovarian tumors that appear at a young age in early stages and the borderline forms in the largest number of cases support the hypothesis of a preclinical phase of ovarian carcinoma with low malignancy. Consequently, adequate screening should be considered precious⁽⁷⁾.

In *Obstetrics* this combined methodology, during office consultations, allows for diagnosis and management of early pregnancy, of ectopic pregnancy, of the trophoblastic implantation in the womb and its growth and macroscopic morphology.

The diagnosis of some pathological alterations, like hydatiform moles, early pregnancy failure, blind ovum, multiple gestations, assessment of the fetal condition, fetal growth and development may be performed.

Early ultrasound diagnosis is very precious in placenta previa management and cervical incompetence. On the contrary, the most delicate fetal diagnoses such as fetal biometry, estimation of fetal weight in the case of prematurity, intrauterine growth restrictions, macrosomia, the central nervous system, abdominal and renal skeletal malformations must be done by an ultrasound expert with very sensitive equipment.

This is a very delicate and precise second level imaging diagnosis which involves a lot of clinical and legal responsibility in the management of complicated prenatal pathologies.

CONCLUSION

We believe that in office practice the gynaecologist can be of great help by using ultrasound exploration to better define the clinical findings during the basic physical examination.

However, in many cases it can not substitute for a second level consultation by expert specialists in ultrasound diagnosis.

Ultrasound and general and gynaecological simultaneously combined examination in first level office diagnosis both in the gynecologic and obstetric field should be performed starting with the thyroid gland and following with the breast, abdomen (liver, kidney) pelvis and internal genital organs to complete deep evaluation, palpation and ultrasound exploration.

In our opinion only in this way can the gynecologist carry out his own modern professional role and duties.

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