

LIMITS OF ECHOGRAPHY IN THE EVALUATION OF OVARIAN TUMORS

P. RESTA, G. B. NARDELLI, A. AMBROSINI,
L. BECAGLI, D. DE SALVIA

Department of Obstetrics and Gynecology
University of Padua (Italy)

Carcinoma of the ovary is the second most frequent genital neoplasia and has a mortality rate of over 50%. Continuous study is dedicated to this disease in order to detect this tumor while still in the asymptomatic phase, that is, the identification of the malignant development of a mass before it extends beyond the capsule. Ovarian carcinoma usually occurs in women over 40 years of age, and whose history includes abundant menses, tendency to abort spontaneously, infertility, and nulliparity.

On echography, the ovaries appear as sonolucent zones, about $2 \times 1.5 \times 0.5$ cm in size, located at the sides of the uterine fundus. It is not always possible to localize them with a single transverse scan since they may be situated on different planes. Due to the atrophy that involves these organs following menopause, the ovaries shrink, even considerably, so that often they are not detected on ultrasonography. Normal size ovaries on ultrasound in post-menopausal women always require laparoscopy or laparotomy in order to rule out a possible carcinoma.

Routine examination of the pelvis very rarely reveals the presence of ovarian carcinoma, and then only in a very advanced phase when it is usually too late. On the other hand, a non-invasive technique lacking documentable side-effects, such as ultrasonography, appears ideal for mass screening; for this reason, echography has completely supplanted radiology in this sector. Unfortunately, there are many situations which limit this technique: the very small dimensions of the adnexa in menopause and climacteric do not consent visualization; the axial and longitudinal resolution of the equipment hinders recognition of masses smaller than 1 cm; the presence of air in the intestine may interfere with an accurate evaluation due to its proximity to the adnexa, and the presence of the tubes and feces, where the air present hinders ultrasound propagation, and feces may be misinterpreted as mass. The pre-

SUMMARY

The current possibilities of the use of the echographic technique in the diagnosis of ovarian tumors are analysed.

sence also of adherences between the intestinal loops and the internal genitals may hinder diagnosis by obscuring the adnexa.

Many workers specify only the consistency of the tumoral mass. When the ultrasound image indicates a solid mass (presence of numerous echoes within the mass, coarse walls, absence of posterior intensification, and occasionally posterior wall absence), the mass is usually considered a leiomyosarcoma, but the cause is unknown; if the patient is young and the mass is cystic (absence of hollow echo, smooth walls, presence of posterior wall and intensification behind it), the most probable diagnosis is benign cystic tumor. Nevertheless, it has often been observed that a mass is malignant even though it possesses all the characteristics of a simple cyst; from this it follows that the use of ultrasonography for a definite diagnosis is not yet feasible. A mixed echographic image, that is solid-cystic, of an ovarian mass is commonly associated with malignant degeneration; it is thought that the liquid component of the mass is caused by the necrosis determined by the rapid growth of the tumor. However, it must be kept in mind that solid-cystic images are observed also in dermoid cysts,

endometriotic cysts, ectopic pregnancies, abscesses, and small multiple cysts.

Ultrasound does not furnish information regarding small benign or malignant masses, but does detect small ascites collections, and thus indirectly leads to the suspect of carcinoma presence. The echographic image of a tumor, in effect, reflects its macroscopic and not histologic aspect. The correlations between ultrasonic image and histologic picture are low, and are further decreased in studies carried out with the double-blind technique.

In conclusion, these current limitations to the echographic technique should be kept in mind since they relegate this method to a secondary role in the diagnosis of ovarian tumors. Since the possibilities of ultrasound application are continuously increasing, it is hoped that a more reliable and confident diagnosis may be formulated in this field in the future.

BIBLIOGRAPHY

- 1) De Land M., Fried A., Von Nagell J. R., Donaldson E. S.: *Surg. Gyn. Obst.*, 148, 346, 1979.
- 2) Resta P., Nardelli G. B., Ambrosini A., D'Antona N.: *Eur. J. Gyn. Oncol.*, 1, 1, 1979.
- 3) Resta P., Nardelli G. B., Ambrosini A., D'Antona N.: *Clin. Exp. Obst. Gyn.*, 6, 256, 1979.