# ECHOGRAPHIC REVIEW AND MAMMARY PATHOLOGY: OUR EXPERIENCE

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SUMMARY

The authors performed ultrasonic examinations on 893 cases, dividing echographic characteristics of pathological conditions in four groups, namely: cystic formations, solid benign tumors, fibrocystic mastopathy and malignant neoplasms.

Inofensiveness of the method, together with good results achieved by it, have indicated ultrasounds as suitable supplementary diagnostic method in the pathoiogy of the breast.

The use of routine echographic examination of the breast in Ultrasonic Diagnostic Centers of the University of Padua and Siena, has led to the characterization of the echographic pictures obtained in the various types of breast pathology (fig. 1, 2) ([1, 2, 3, 4]). The features thus demonstrated may be expressed, as follows (Tab. 1, 2, 3, 4):

Table 1.

*Benign cystic forms*:
— round image
— smooth and taut borders
— absence of internal echoes
— intensification of echoes in the posterior wall
— intensification of echoes behind the posterior wall.

Table 2.

*Benign solid forms*:
— not always round image
— wrinkled and irregular borders
— presence of internal echoes
— presence of posterior wall
— occasionally, cone of shadow behind the posterior wall.

Table 3.

*Fibrocystic mastopathies*:
— absence of circumscribed image
— presence of numerous echoes, more or less crowded together
— presence of micropolycystic structures
— presence of fibrous strands.

Table 4.

*Malignant forms*:
— irregularly shaped image
— not circumscribed image
— presence of internal echoes
— occasionally, absence of posterior wall
— presence of cone of shadow behind the posterior wall.

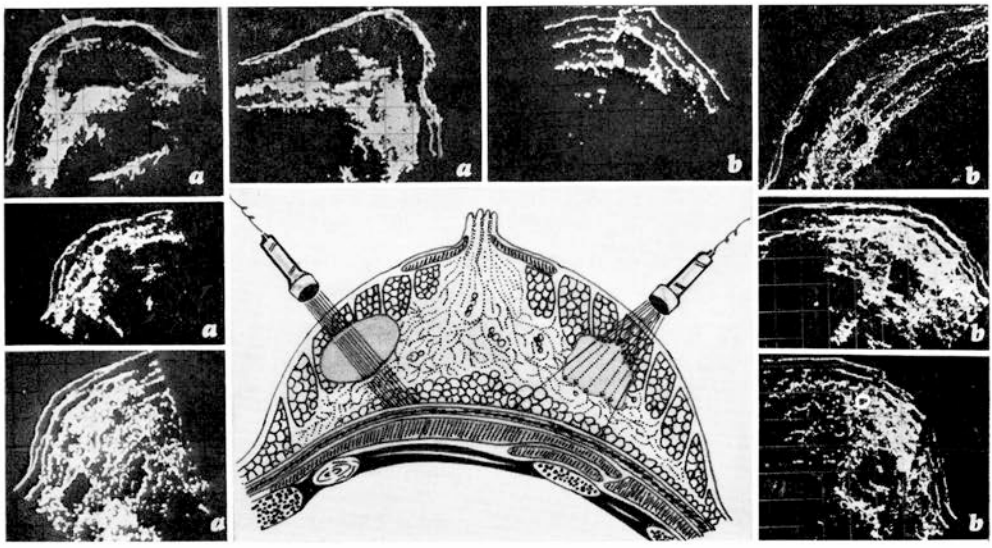


Fig. 1. — Echographic pictures of benign cystic (*a*) and solid (*b*) forms of the breast.

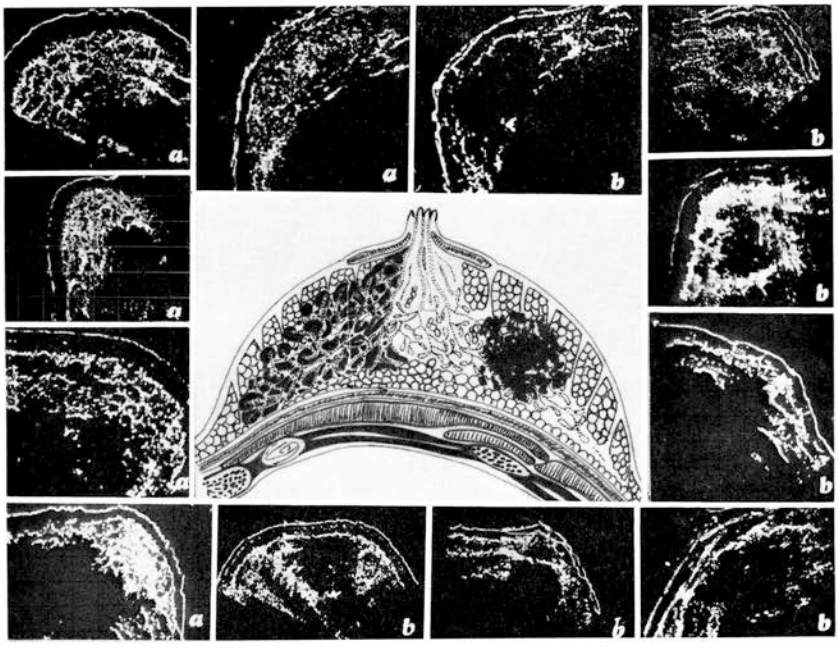


Fig. 2. — Echographic pictures of fibrocystic mastopathies (*a*) and malignant forms (*b*) of the breast.

Table 5.

| | | | |
|---|---|---|---|
| Echographic examinations | 893 | In normal breast<br>In pathologic breast | 514 (57.5%)<br>379 (42.5%) |
| Pathologic breasts | 379 | Benign cystic forms<br>Benign solid forms<br>Fibrocystic mastopathies<br>Malignant forms | 105 (27.7%)<br>124 (32.7%)<br>91 (24.0%)<br>59 (15.6%) |

## MATERIAL AND METHODS

This series includes 893 echographic examinations of which 379 were carried out in pathologic breasts confirmed histologically (Tab. 5).

In the following table the echographic diagnosis in the various pathologic forms is reported (Tab. 6):

Table 6.

| Histologic diagnosis | | Echographic diagnosis | |
|---|---|---|---|
| Malignant forms | 59 | Malignant<br>Benign | 49 (83.05%)<br>10 (16.95%) |
| Benign forms | 318 | Malignant<br>Benign | 24 ( 7.54%)<br>294 (92.46%) |

We then divided the malignant neoplasias with regard to their size into the four classic groups, and evaluated the echographic diagnosis obtained [5, 6].

As may be seen, the smaller the neoplasia, the more difficult is the examination and the possibility of error is higher (Tab. 7) [7, 8].

Table 7.

| Stage | N° case | Echographic diagnosis | |
|---|---|---|---|
| $T_1$ | 14 | Malignant<br>Benign | 8 (57.14%)<br>6 (42.86%) |
| $T_2$ | 34 | Malignant<br>Benign | 30 (88.23%)<br>4 (11.77%) |
| $T_3$ | 11 | Malignant<br>Benign | 11 (100 %)<br>0 |
| $T_4$ | 0 | Malignant<br>Benign | 0<br>0 |

The echographic diagnosis given in the various forms of benign pathology is reported in the following table (Tab. 8).

Table 8.

| Histologic diagnosis | | Echographic diagnosis | |
|---|---|---|---|
| Benign cystic forms | 105 | Malignant neoplasias<br>Benign solid forms<br>Benign cystic forms<br>Fibrocystic mastopathy | 0<br>8 ( 7.61%)<br>94 (89.5 %)<br>3 ( 2.86%) |
| Benign solid forms | 124 | Malignant neoplasias<br>Benign solid forms<br>Benign cystic forms<br>Fibrocystic mastopathy | 25 (20.1 %)<br>86 (69.3 %)<br>10 ( 8.06%)<br>3 ( 2.42%) |
| Fibrocystic mastopathies | 91 | Malignant neoplasias<br>Benign solid forms<br>Benign cystic forms<br>Fibrocystic mastopathy<br>Normal picture | 0<br>6 ( 6.59%)<br>7 ( 7.69%)<br>57 (62.6 %)<br>21 (23.0 %) |

## DISCUSSION AND CONCLUSION

Therefore, echographic investigation represents a useful complementary procedure to the other better known examinations for the diagnosis of breast disease ([9, 10]).

However, it may not be employed as an isolated method, especially in malignant disease where the incidence of false negative cases is very high.

Due to its easy and rapid execution and complete absence of contraindications even in pregnancy, we feel it should always be employed as a primary screening examination for detection of disease.

In addition, this procedure is continually evolving and it may undergo further technical refinement.

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