Designed for:
Radiologists • Surgeons • Pathologists

Implications of mammography, MRI, breast ultrasound and interventional methods in your practice

This course provides extensive knowledge about diagnostic breast imaging, differential diagnosis of breast diseases, implications for management and newest diagnostic technologies
László Tabár, MD., FACR (Hon)
Professor emeritus of Radiology
Course Director

2014
BREAST SEMINAR of the Hellenic Senology Society
Advanced Course on Multimodality Detection and Diagnosis of Breast Diseases

FACULTY

László Tabár, MD., FACR. (Hon).
Invited Speaker
Professor emeritus of Radiology,
Department of Mammography,
Falun, Sweden

Images from the non-profit Tabar Foundation for Research and Education for Breast Cancer
www.tabarfoundation.org
1st day  Morning lectures between 9:00 AM and 12:00

9:00  INTRODUCTION FOLLOWED BY DIDACTIC LECTURES COVERING:

A NEW ERA in the DIAGNOSIS and TREATMENT of BREAST CANCER.
THE ISSUE of UNI- and MULTIFOCALITY - CLINICAL IMPLICATIONS

THE BASIS FOR EFFICIENT INTERPRETATION OF THE MAMMOGRAPHIC IMAGE

- Correlative 3-dimensional, subgross anatomy and mammography of the normal breast
- The problem: The variable appearance of the normal mammogram.
- The solution: classification into structural subtypes, mammographic parenchymal patterns, based on 3D/subgross histologic-mammographic correlation.
- Result: Increased confidence in reading a mammogram and finding subtle perceptual abnormalities

Breaks at 10:00 and at 11:00 AM

MAMMOGRAPHIC PARENCHYMAL PATTERNS

- Practical implication, problems and solutions. Mammographic patterns and the risk of developing breast cancer. Understanding the mammograms of dense breasts.

12:00 PM - 1:00 PM  Lunch
1:00 INTERACTIVE LECTURE SERIES WILL COVER THE FOLLOWING TOPICS:

DESCRIPTION OF THE MAMMOGRAPHIC SIGNS OF *IN SITU* BREAST CANCER

- Overview of the subtle mammographic signs of *in situ* carcinoma
- Every fourth DCIS case is detected by mammographic signs other than calcifications
- **Special forms of *in situ* carcinoma**
  - architectural distortion - dominant mass - cases detected at galactography

ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

**Breast diseases originating in the major ducts**

- **Benign type calcifications** originating in the major ducts
  - a) Secretory disease type calcifications
- **Malignant type calcifications** originating in the major ducts:
  - Four different types of calcifications: a) fragmented casting type, b) dotted, snake skin-like,
  - c) skipping stone-like and d) pearl necklace-like

Break at 2:30
1st day  
Afternoon lectures between 1:00 AM and 4:30, cont.

ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

b) Dotted casting type calcifications  
snake skin-like

c) Skipping stone-like calcifications  
d) Pearl necklace-like calcifications

Breaks at 2:30 and 3:30

* The role of breast MRI examination in demonstrating the extent of Gr 3 in situ carcinoma.
* Mammographic /3D histologic correlation helping to explain the underlying pathophysiology and outcome.

Practice of calcification analysis. Faculty-audience interaction.

4:30  End of the lectures for the day
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2nd day

Morning lectures between 8:30 AM and 12:00

8:30
NON-CALCIFIED ASYMMETRIC DENSITIES WITH ARCHITECTURAL DISTORTION ON THE
MAMMOGRAM

ANALYSIS of BENIGN RADIATING STRUCTURES on the mammogram, originating in the ducts
- Radial scar. A suggested algorithm for the workup of stellate lesions
- Indications and contraindications of using minimally invasive preoperative diagnostic
techniques.

Breaks at 10:00
and
at 11:00 AM

Radial scar
Neoductgenesis

ANALYSIS of MALIGNANT LESIONS PRESENTED as RADIATING STRUCTUREs on the
mammogram. Clinical presentation, mammographic appearance and outcome

- Duct forming invasive carcinoma / Neoductgenesis cases presenting on the
mammogram as architectural distortion
- A suggested algorithm for the workup of lesions with architectural distortion
- Indications and contraindications of using minimally invasive preoperative diagnostic
techniques. The role of breast MRI in diagnosing diffuse breast cancers.

Non-calcified architectural distortion: extensive duct forming invasive cancer
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2nd day

Morning lectures between 8:30 AM and 12:00, cont.

ANALYSIS of MALIGNANT LESIONS PRESENTED as RADIATING STRUCTUREs on the mammogram. Clinical presentation, mammographic appearance and outcome


Multimodality workup of a huge invasive lobular carcinoma

Diffuse and solid invasive lobular carcinoma

12:00 Lunch
2nd day

Afternoon lectures between 1:00 PM and 4:30 PM, cont.

1:00 THE DIDACTIC LECTURE SERIES WILL COVER THE FOLLOWING TOPICS:

Grade 2 cancer in situ: Mammographic / 3-D histologic / MRI correlation of cases with crushed stone-like/pleomorphic calcifications on the mammogram.

Mammographic / 3D histologic correlation of pleomorphic calcifications

Mammographic / histologic correlation of pleomorphic calcifications

• The morphologic analysis of calcifications representing a less aggressive carcinoma: well differentiated CIS

Breaks at 2:30 and at 3:30 PM

Grade 1 in situ carcinoma: Mammographic / 3-D histologic / MRI correlation of cases with powdery calcifications on the mammogram
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2nd day
Afternoon lectures between 1:00 PM and 4:30 PM, cont.

HOW TO FIND THE INVASIVE BREAST CANCER WHEN IT IS STILL SMALL. SCREENING COMBINED WITH AN ANALYTICAL APPROACH FOR THE DIFFERENTIAL DIAGNOSIS OF STELLATE / SPICULATED LESIONS.

- A systematic method for viewing mammograms. Areas on the mammogram where most breast cancers will be found. Viewing dense breasts. Viewing relatively easy-to-read breasts

PRACTICE IN PERCEPTION OF SUBTLE, NON-CALCIFIED CANCERS

The role of hand-held ultrasound / 3D automated ultrasound / MRI in the detection and workup of the findings. The multimodality approach.

- **Malignant stellate lesions**: clinical presentation, histology, mammographic/ MRI/ ultrasound appearance and outcome:
  - **invasive breast cancer** originating from the TDLU: the most frequently occurring carcinoma. Multimodality case demonstrations.
  - **tubular carcinoma**: the stellate tumor with the best outcome
  - sonographic and MRI correlation with the mammogram

Breaks at 2:30 and at 3:30 PM

Multifocal invasive and in situ carcinoma on an area measuring 180X60 mm pN 4/9

4:30 End of the course
For more information and registration please contact:

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Computer simulation images of the development of Grade 2 in situ carcinoma within the TDLU. The lobule becomes gradually distended and deformed. Calcifications are formed within the necrotic debris and are seen on the mammogram as crushed stone-like calcifications.
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Breast Cancer
Early Detection with Mammography

Casting Type Calcifications: Sign of a Subtype with Deceptive Features
László Tabár
Tibor Tot
Peter B. Dean

Crushed Stone-like Calcifications: The Most Frequent Malignant Type
László Tabár
Tibor Tot
Peter B. Dean

Breast Cancer
The Art and Science of Early Detection with Mammography

László Tabár
Tibor Tot
Peter B. Dean

Teaching Atlas of Mammography

László Tabár
Peter B. Dean
With the contributions of Tibor Tot
4th edition

www.thieme.com
Understanding the Breast in Health and Disease

Prostate and Breast: Brother and Sister Organs

The basic structural elements of the female breasts are illustrated here in true 3-dimensional (3D) images and described in this Volume 1 by three breast cancer experts with decades of experience in the diagnosis of breast diseases. These images provide the best way to understand the great variability of the normal breast structure and the changes brought about by benign and malignant diseases.
Micropapillary breast cancer of ductal origin associated with a normal TDLU

Ductal Adenocarcinoma of the Breast (DAB), Part 3

Breast cancers that originate in the major milk ducts (ductal adenocarcinoma of the breast, DAB) are diffuse and often extensive. The disease may occupy an entire lobe from the nipple to the chest wall, and frequently extends close to the skin. For these reasons, breast conserving surgery and skin or nipple sparing mastectomy of DAB cases carry a higher risk of local/regional/distant recurrence. In addition: 1) a considerable portion of the disease may lack calcifications, often occult for the imaging methods. 2) This subtype of breast cancer is less responsive to postoperative radiotherapy.

Breast cancers originating from the major milk ducts (breast cancer of ductal origin, DAB) occasionally cause axillary lymph node metastases which are similar in appearance at histology to DAB in the breast. Regardless of whether or not the myoepithelial cell layer is demonstrable, the decisive question is how do the duct-like structures grow into the lymph nodes? Although the histopathologic appearance will be termed by pathologists as invasive cancer, i.e., when found in the prostate or in the axillary lymph nodes, a similar histopathologic appearance is termed “DCIS” when found in the breast. In reality, we face “duct forming invasive cancer” with poor outcome (neoductogenesis) in the breast, in the prostate and in the axillary nodes.

Normal atrophic ducts and cancerous, distended ducts side by side

Neoductogenesis (DAB) associated with angioneogenesis

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