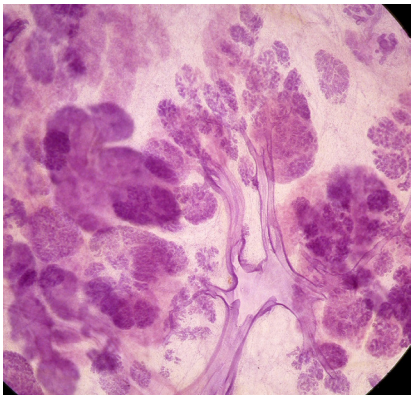


3D image of the breast tissue

3D image of the breast tissue

Jordan Breast Cancer Program

2019

October 7-10

Multimodality Detection *and* Diagnosis of Breast Diseases

combined with

Hands-on Breast MRI *and* Tomosynthesis

AMMAN, Jordan

Le Grand Hotel-Amman

Q. Nour St., Amman

Faculty

LÁSZLÓ TABÁR, MD,FACR (Hon) **Course Director**
Professor emeritus of Radiology

STAMATIA DESTOUNIS, MD, FACR

and

MATS INGVARSSON, MD.

This course provides extensive knowledge about diagnostic breast imaging, differential diagnosis of breast diseases, implications for management and newest diagnostic technologies

FACULTY

László Tabár, MD,
FACR (Hon).
Course Director

Professor emeritus of Radiology, Department of Mammography, Central Hospital, Falun, Sweden

Stamatia Destounis, MD., FACR
Elizabeth Wende Breast Care, LLC
Professor of Radiology
University of Rochester School of Medicine and Dentistry

Mats Ingvarsson, MD.
Department of Mammography,
Central Hospital
Falun, Sweden

2019

BREAST SEMINAR SERIES of the
Jordan Breast Cancer Program
Detection and Diagnosis of Breast Diseases
Using the Multimodality Approach. An interactive course.

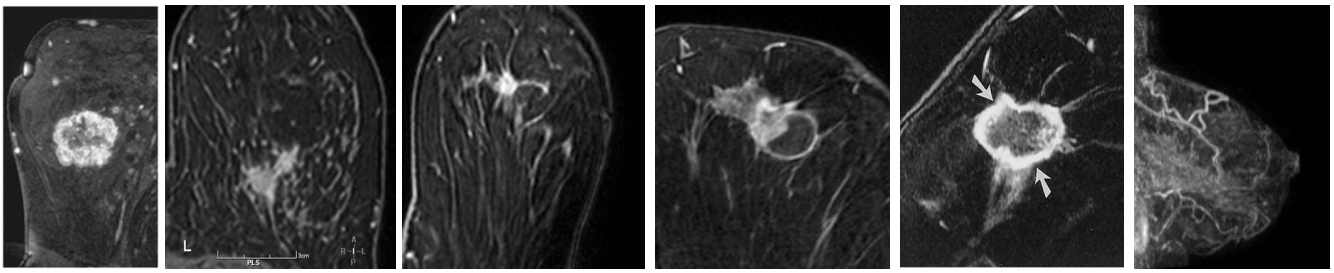
László Tabár, MD, FACR (Hon)
Course Director

NEW COURSE DESIGN

* The mammography lectures on each major subject will be followed by **interactive screening sessions** consisting of a mixture of normal and early cancer cases presented on the large screen exactly as they appear on a viewing station at screening. Using a specially provided polling program downloaded to each participant's smartphone or tablet, the attendees will be asked to vote anonymously on each case. The aggreate results will appear instantly for discussion and evaluation. This new course design gives immediate feedback demonstrating the effectiveness of various screening methods.

* During the course the attendees will progressively **improve their interpretive expertise**, as they learn the full spectrum of normal breast images, with all important findings explained with the help of 3-dimensional histology images.

* These skills will lead to **fewer call-backs** and greater confidence in reading a large number of mammograms.
* **Immediate feedback** and discussion of every case throughout every reading session.
* Special emphasis will be placed on **finding early phase breast cancers.**
* All abnormal cases are fully worked up and the **complete imaging workup will be presented in detail, including ultrasound, MRI and large section histopathology.**



MRI Interpretation sessions at workstations - Mats Ingvarsson, MD

Tomosynthesis Case Interpretation Sessions at workstations - Stamatia Destounis, MD, FACR:

László Tabár, MD, FACR (Hon)
Course Director

Course Overview:

* This Comprehensive Breast Imaging Course, led by László Tabár, MD, FACR, (Hon) and with participation of the Faculty members will offer radiologists the following:

* **Normal mammograms** will be mixed with proven abnormal cases.

* Reading of normal and **abnormal mammograms** will take place using an interactive technique (see page III).

* During the course the attendees will progressively improve their interpretive expertise, as they learn the full spectrum of normal breast images, with all findings explained with the help of 3-dimensional histology images.

* These skills will lead to fewer call-backs and greater confidence in reading large number of mammograms.

* Special emphasis will be placed on **finding early phase breast cancers.**

* All abnormal cases are fully worked up. The complete workup will be presented in detail, including **hand-held ultrasound**, **automated breast ultrasound**, **MRI** and l**arge section histopathology.** There will be a special session about **tomosynthesis, breast MRI and ABUS** (automated breast ultrasound).

* Special sessions will describe **the current clinical roles of breast MRI and tomosynthesis,** review the image patterns of malignant breast diseases, correlate the findings with the underlying pathology.
* Description of the recent technical advances in breast MRI, including imaging protocols and techniques needed to produce high quality breast MRI images.
* Teaching how to characterize breast lesions utilizing multimodality imaging, breast MRI and tomosynthesis included.
* Learning **MRI reading and interpretation at high resolution workstations.**
* Studying **tomosynthesis cases at high resolution workstations**).

László Tabár, MD, FACR (Hon)
Course Director

Program Objectives:

1. Learn the full spectrum of normal mammograms through detailed explanation of the mammographic images.
2. Progressive improvement of the attendees' interpretive expertise.
3. Increase confidence in reading large numbers of full field digital mammograms at lower call-back rates.
4. Improve skills in detecting early phase breast cancer at digital mammography screening.
5. Greater proficiency in working up screen-detected findings.
6. Appreciate the clinical relevance of unifocal/multifocal/diffusely infiltrating breast cancers.
7. Emphasize the importance of multimodality approach to workup cases in a multidisciplinary environment.
8. Assess the clinical role of breast MRI in patient selection and in improving the detection, diagnosis and treatment of breast diseases.
9. Characterize breast lesions utilizing multimodality imaging, breast MRI included. The goal is to accurately and efficiently identify, interpret and report on breast MRI examinations

Attendees interpreting all interactive digital mammography examinations, hands-on breast MRI, ABUS and tomosynthesis cases will receive a **Certificate,** confirming that they have read the above mentioned breast imaging cases under the direct supervision of an interpreting physician.

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László Tabár, MD, FACR (Hon)
Course Director

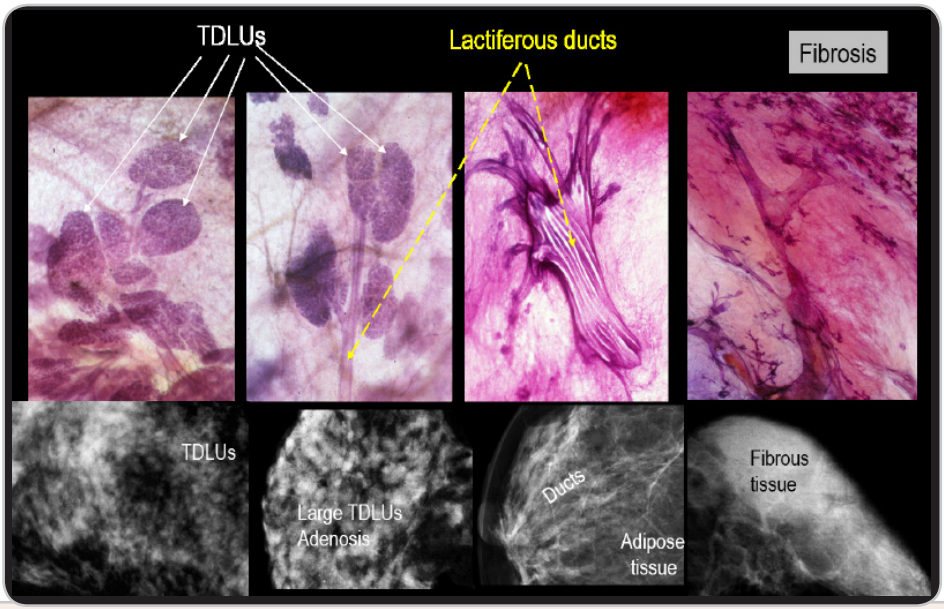
Day 1 Morning lectures between 9:00 AM and 12:00 PM. Break: 10:30 AM

9:00 INTRODUCTION FOLLOWED BY DIDACTIC LECTURES COVERING:

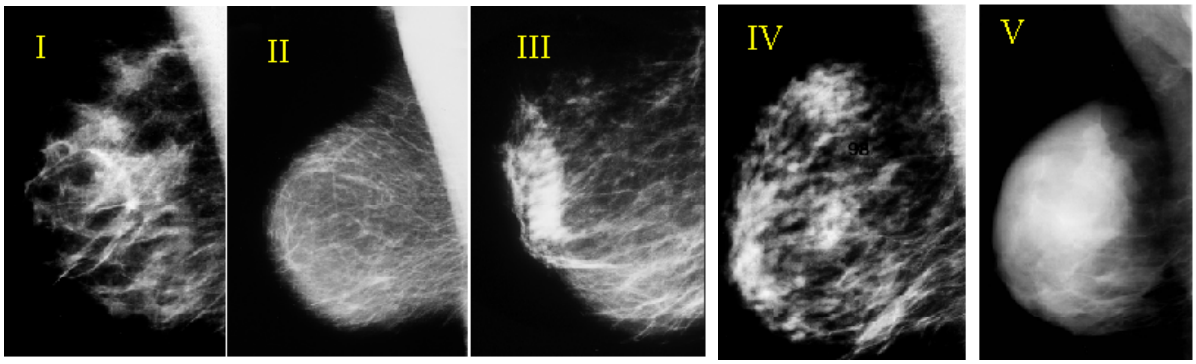
- A NEW ERA in the DIAGNOSIS and TREATMENT of BREAST CANCER.

- **HOW TO READ A MAMMOGRAM.** THE BASIS FOR SKILLFUL AND EFFICIENT INTERPRETATION OF THE MAMMOGRAPHIC IMAGE

- Correlating 3-dimensional, subgross anatomy with mammography of the normal breast results in **increased confidence in reading a mammogram** *and* **finding small abnormalities**. Special training in large format thin and thick section (3D) histopathologic correlation enables the radiologist to account for every linear and nodular density on the mammogram.



The breast, unlike any other organ, has **five structurally different mammographic parenchymal patterns.**



12:00 PM - 1:00 PM L u n c h

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László Tabár, MD, FACR (Hon)
Course Director

Day 1 Afternoon lectures: 1:00 PM and 5:00 PM. Breaks at 2:30 and 3:30 PM

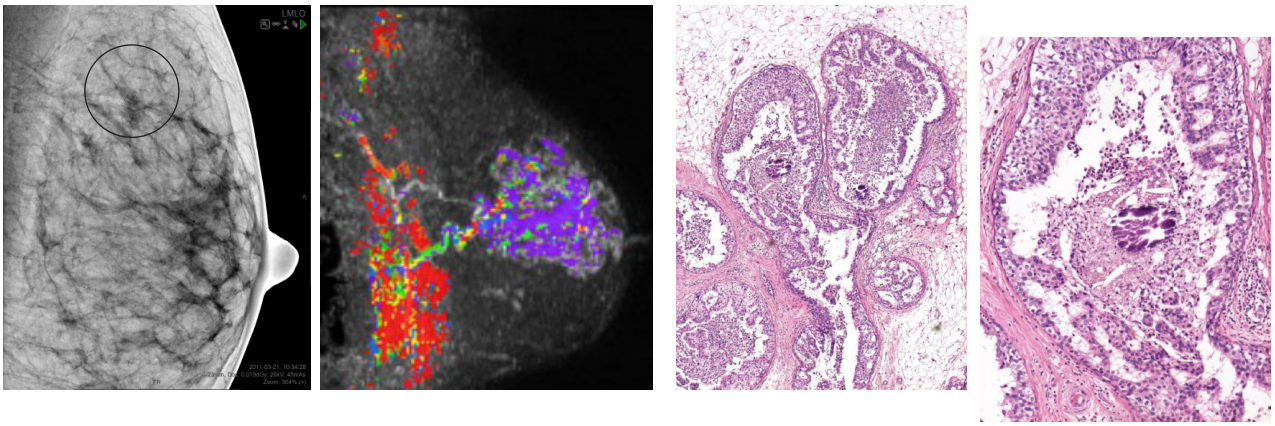
ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

HOW TO FIND THE INVASIVE BREAST CANCER WHEN IT IS STILL SMALL. *Malignant stellate and circular/oval-shaped lesions originating from the TDLUs* **(AAB)**: clinical presentation, histology, mammographic - MRI - ultrasound appearance and outcome.

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

- **Interactive screening session:** Using what has just been taught, each participant will assess *a mixture of normal and early cancer cases*, and vote anonymously using a smartphone or tablet. The combined results will appear instantly for discussion. and evaluation.

* **All abnormal cases are fully worked up and the complete imaging workup will be presented in detail, including ultrasound, MRI and large section histopathology.**



Example: Multifocal invasive and *in situ* carcinoma, where the extensive micropapillary cancer originating from the major ducts was well demonstrated on breast MRI.

4:15 - 5:15 READING TOMOSYNTHESIS CASES AT HIGH RESOLUTION WORKSTATIONS.

5:15 PM. End of Day 1.

Day 2 **Morning lectures between 8:30 AM and 12:00 PM. Breaks: 10:00 &11:00 AM**

8:30 DIDACTIC LECTURE SERIES BY - Stamatia Destounis, MD, FACR:

- Diagnostic evaluation using DBT (digital breast tomosynthesis).
- Synthesized digital breast tomosynthesis, can it replace 2D mammograms?
- Tomo CAD technology: can it cut down reading time for DBT, is it helpful?
- Current Issues with DBT (Radiation dose, PACS, IT)
- Screening / Diagnostic DBT: one view or two views

Discussion

11:15 - 12:00 EVALUATION OF THE TOMOSYNTHESIS CASES VIEWED AT THE WORKSTATIONS.

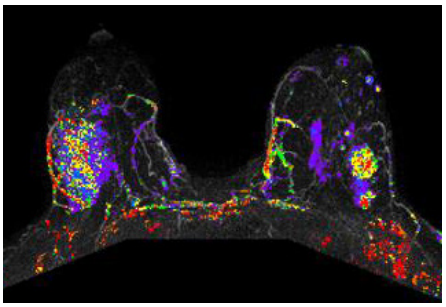
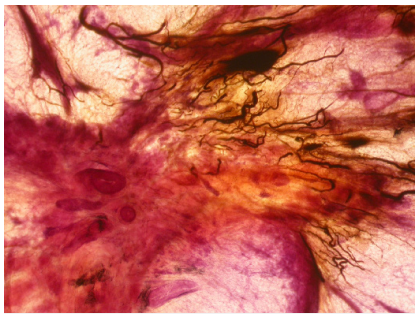
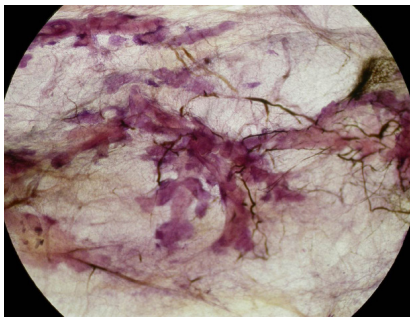
Lunch 12:00 - 1:00 PM

Day 2 Afternoon program between 1:00 PM and 5:15 PM. Breaks: 2:15 & 3:30 PM

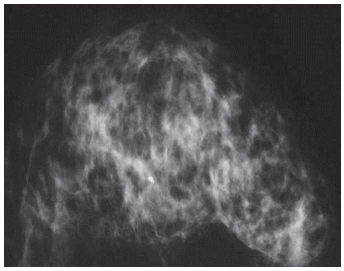
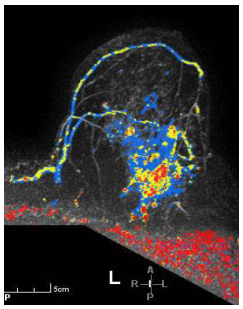
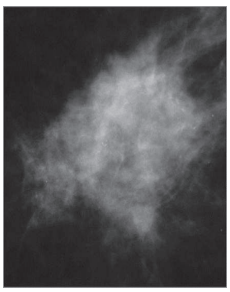
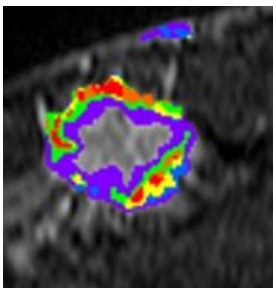
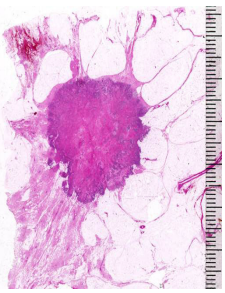
1:00 - 2:15 DISCUSSION OF THE TOMOSYNTHESIS CASES. QUESTION AND ANSWER SESSION - Stamatia Destounis, MD, FACR

2:30 INTRODUCTION to CONTRAST ENHANCED BREAST MRI - Mats Ingvarsson



BASICS of BREAST MRI INTERPRETATION - Mats Ingvarsson

4:15 - 5:15 READING BREAST MRI CASES AT HIGH RESOLUTION WORKSTATIONS.

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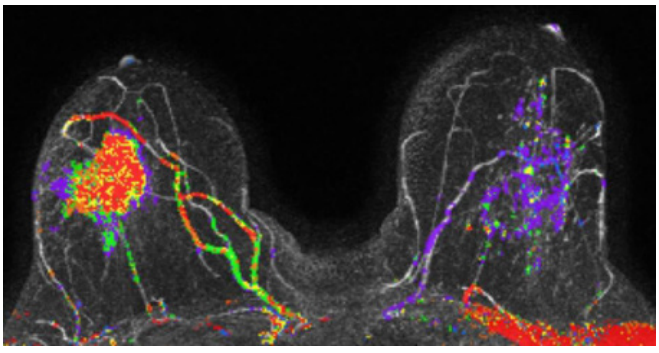
László Tabár, MD, FACR (Hon)
Course Director

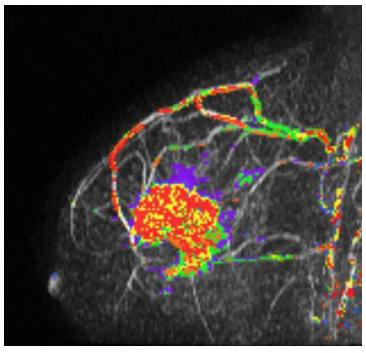
Day 3 Morning program between 8:30 AM and 12:00 PM. Breaks: 10:00 &11:00 AM

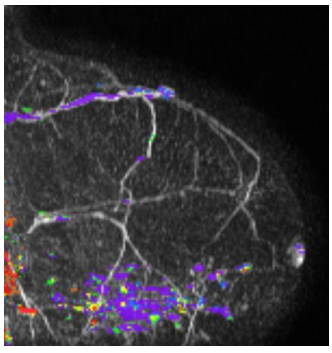
8:30 - 10:00 DISCUSSION OF THE BREAST MRI CASES. QUESTION AND ANSWER SESSION.

10:15 - 11:00 READING BREAST MRI CASES AT HIGH RESOLUTION WORKSTATIONS.

11:15 - 12:00 DISCUSSION OF THE BREAST MRI CASES. QUESTION AND ANSWER SESSION.







MRI Interpretation sessions at workstations - Mats Ingvarsson, MD

Lunch 12:00 - 1:00 PM

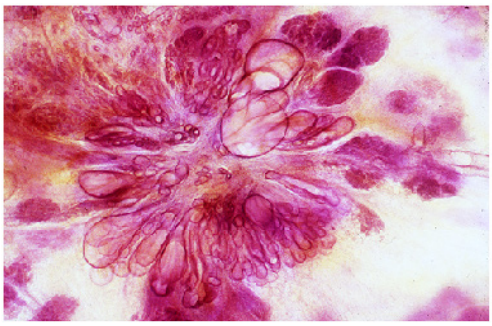
x

Day 3 Afternoon program between 1:00 PM and 4:00 PM. Breaks: 2:15 &3:30 PM

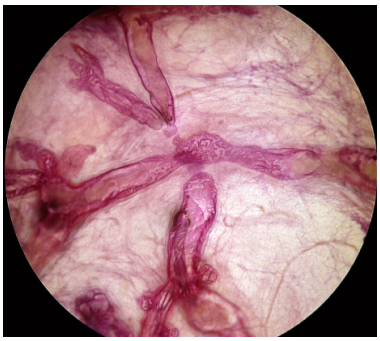
1:00 PM ASYMMETRIC DENSITIES ON THE MAMMOGRAM - LaszloTabar, MD

- *Didactic workup of non-specific asymmetric densities* **without** *architectural distortion*
- *Didactic workup of non-specific asymmetric densities* **with** *architectural distortion*

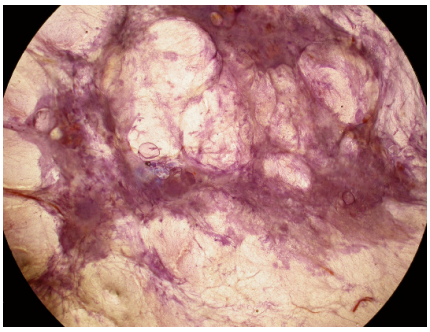
- A suggested algorithm for the workup of lesions with architectural distortion.



Radial scar

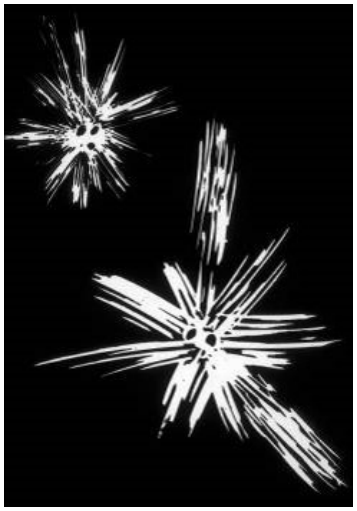


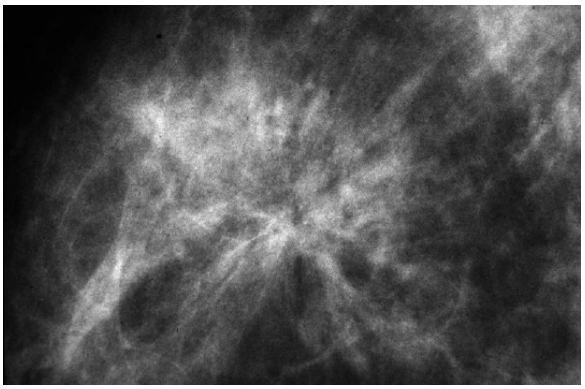
Neoductgenesis (DAB)

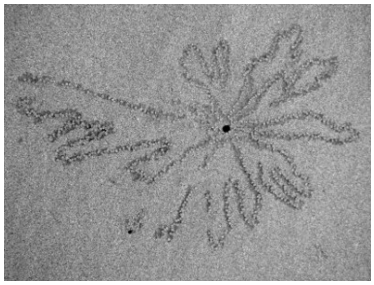


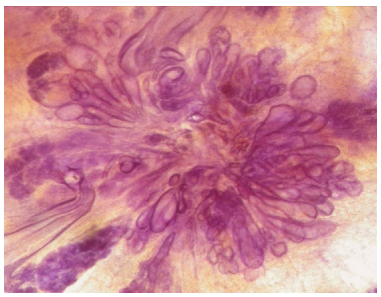
Diffusely infiltrating cancer of mesenchymal origin

ANALYSIS of BENIGN RADIATING STRUCTURES on the mammogram, originating in the ducts:
Radial scar / sclerosing ductal hyperplasia









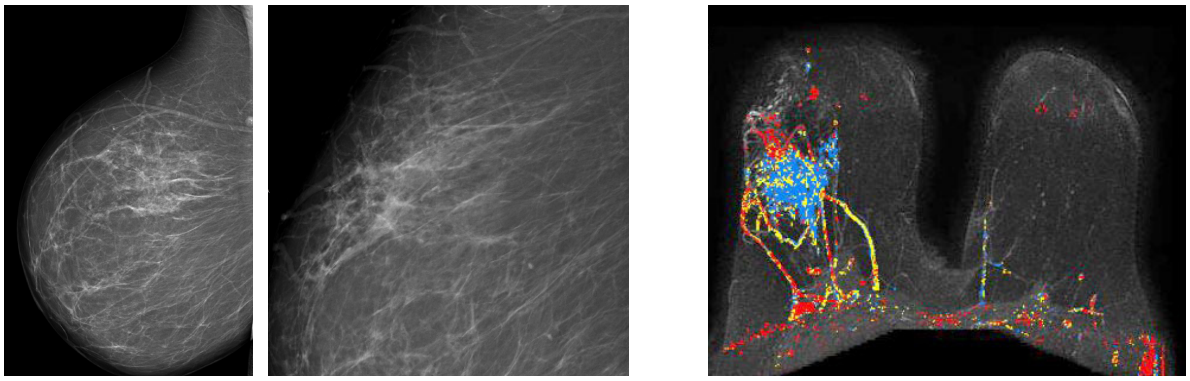
4:15 - 5:30 THE PROBLEM OF VIEWING THE MAMMOGRAMS OF WOMEN WITH DENSE BREASTS. DEMONSTRATION AT WORKSTATIONS. - LaszloTabar, MD

Day 3 Continued description of the afternoon program on Day 3

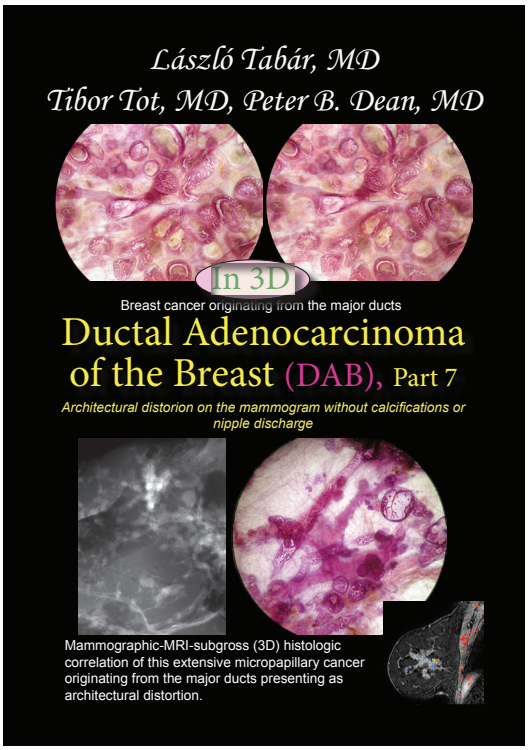
ANALYSIS of MALIGNANT LESIONS PRESENTED as non-calcified RADIATING STRUCTURES on the mammogram. Clinical presentation, mammographic appearance and outcome.

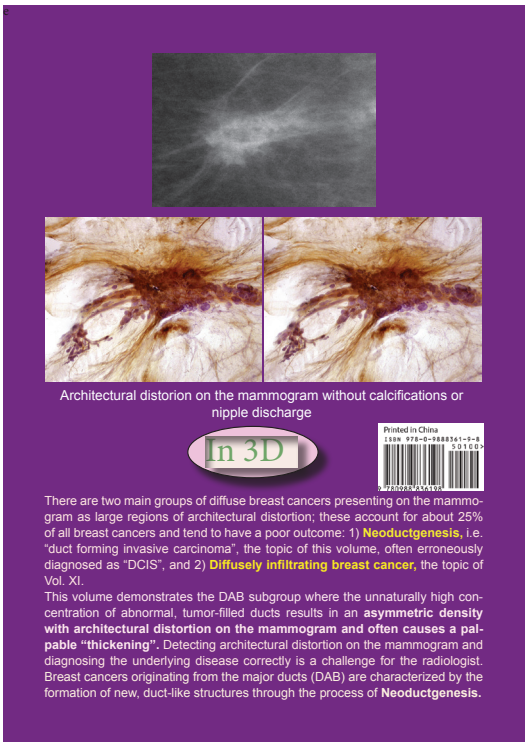
- **Duct forming invasive carcinoma** / **Neoductgenesis** cases presenting on the mammogram as architectural distortion. The role of MRI in diagnosing diffuse breast cancer.

Interactive session for detecting architectural distortion on the mammogram.



Non-calcified architectural distortion: extensive duct forming invasive cancer





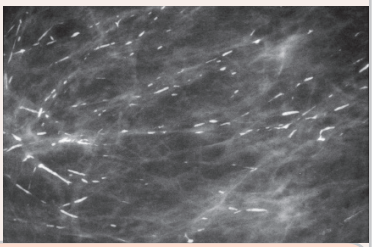
Day 4 **Morning lectures: 8:00 AM and 12:00 PM.** **Breaks at 9:30 and 11:00 AM**

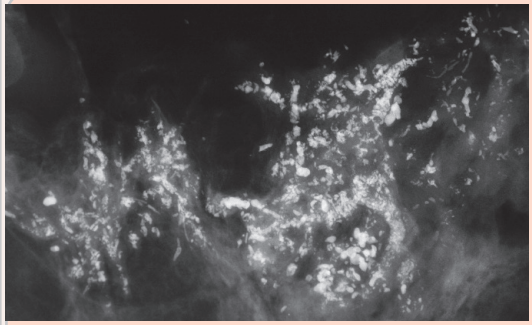
8:00 AM INTERACTIVE LECTURE SERIES WILL COVER THE FOLLOWING TOPICS - LaszloTabar, MD

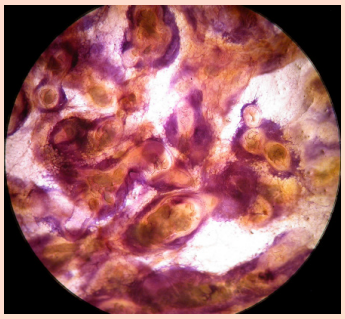
ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

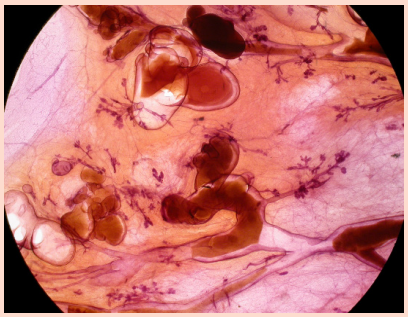
Breast diseases originating in the major ducts - László Tabár, MD

- **Benign type calcifications** originating in the major ducts
  a) Secretory disease type calcifications
- **Malignant type calcifications** originating in the major ducts
- **Interactive calcification analysis.**

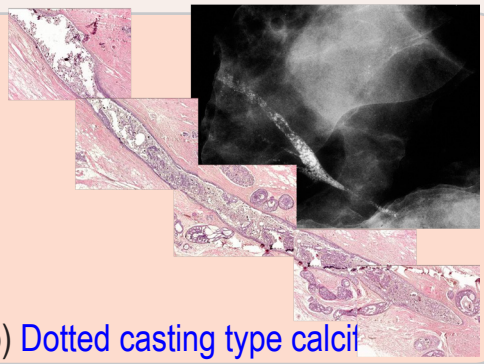






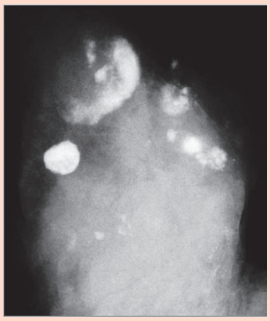


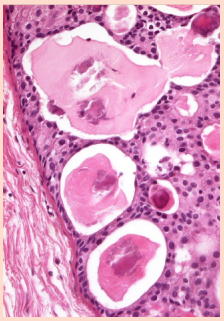
a) Fragmented casting type calcifications.



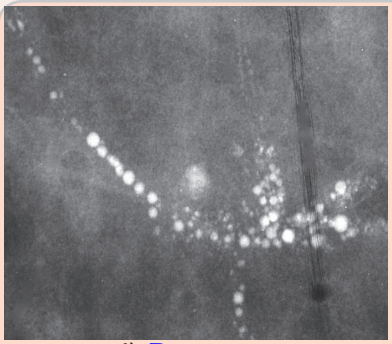
b) Dotted casting type calcifications

* **Four different malignant type calcifications** developing in the major ducts: **a)** fragmented casting type **b**) dotted casting type **c)** skipping stone-like **d)** pearl necklace-like.
* The concept of **neoductgenesis**. Long-term follow-up results. New aspects, correct terminology.
* 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.





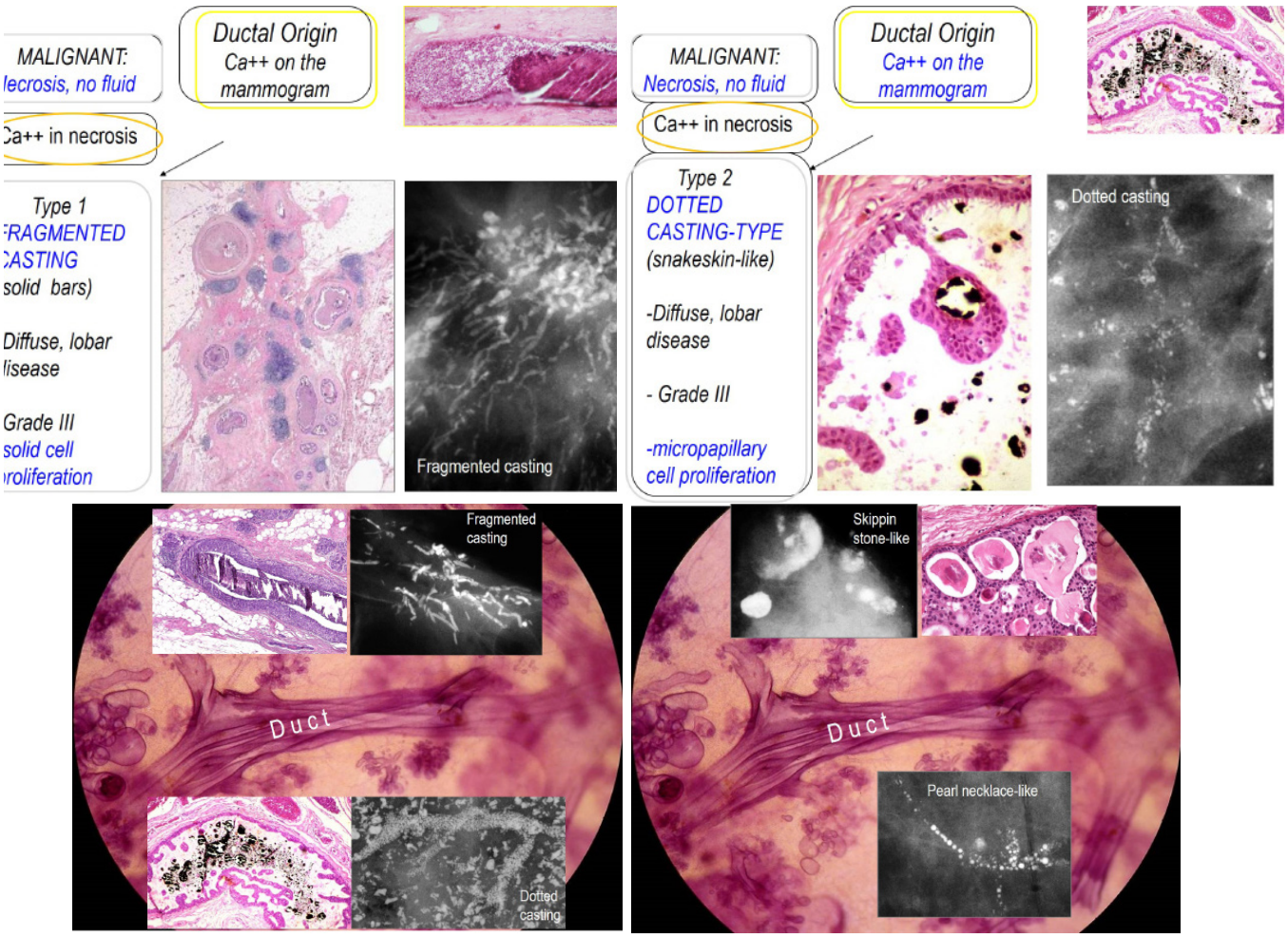
c) Skipping stone-like calcifications



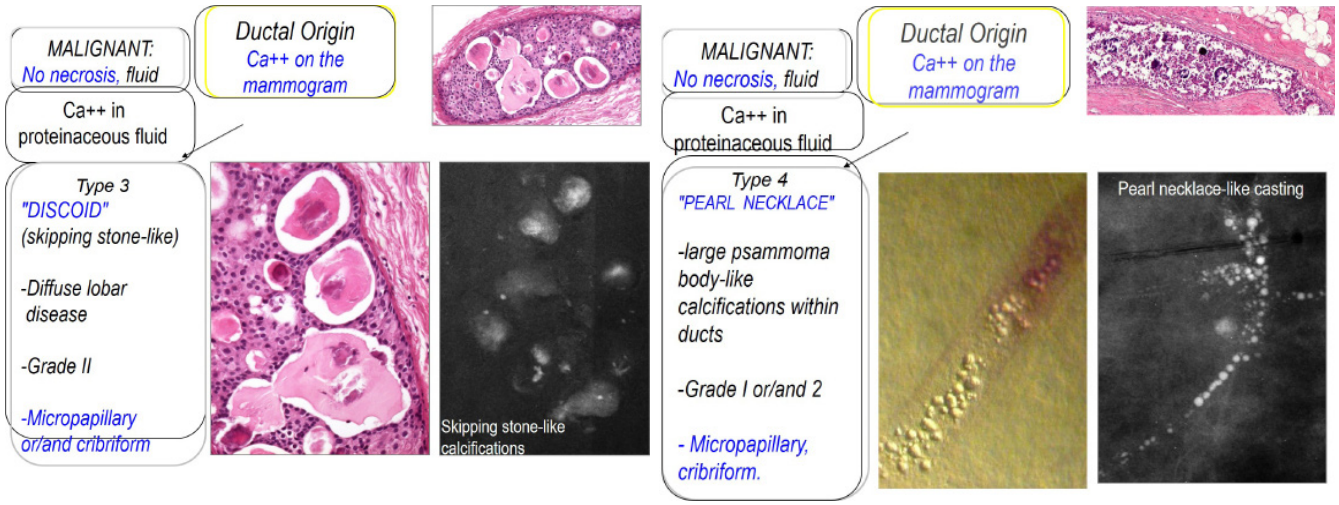
d) Pearl necklace-like calcifica-

12:00 PM - 1:00 PM **L u n c h**

Day 4 Afternoon lectures: 1:00 PM - 4:30 PM Break: 2:15 PM and 3:15 PM



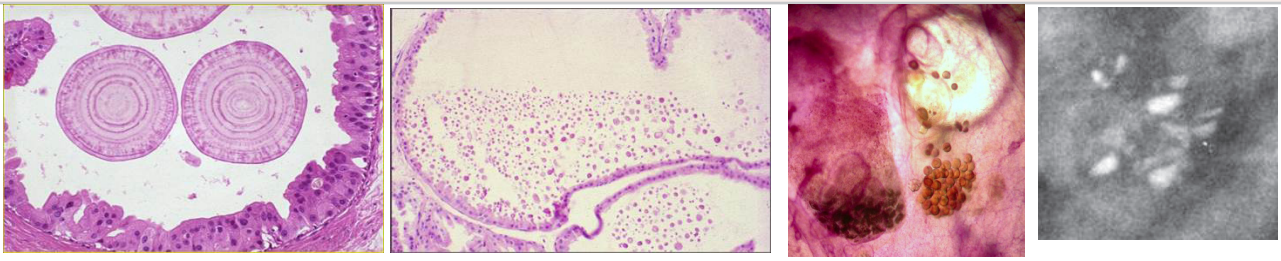
Interactive calcification analysis.



Day 4 Additional description of the afternoon lectures on Day 4

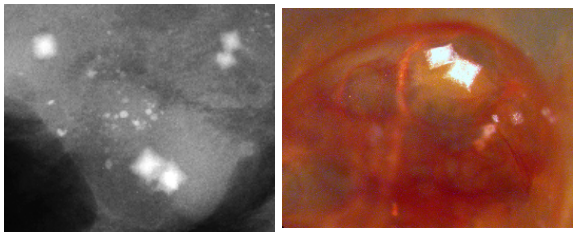
ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

- **Benign breast diseases originating in the TDLU** and associated with calcifications on the mammogram -
- **Fibrocystic change. Fibroadenoma. Different types of adenosis.** Understanding pathophysiology leading to calcified and non-calcified hyperplastic breast changes.

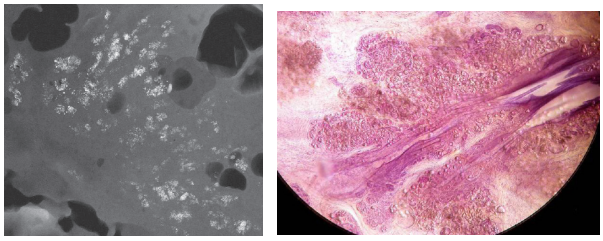


Conventional and 3D histology images of small breast cysts containing sediment of psammoma body-like calcifications, seen as "teacup-like calcifications" on the mammogram.

A

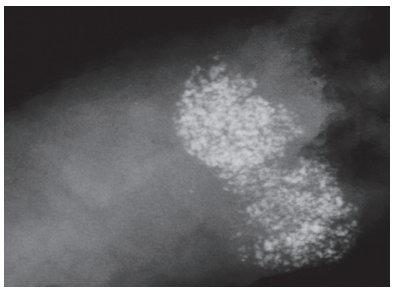


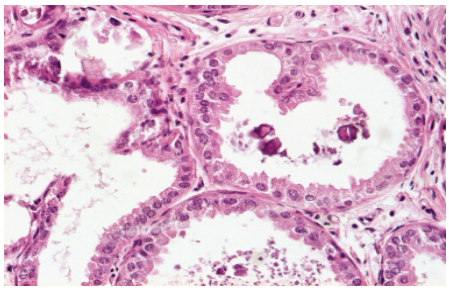
B



Detailed analysis of calcifications associated with hyperplastic breast changes:

(A) Weddellites (B), powdery calcifications on thammogram.



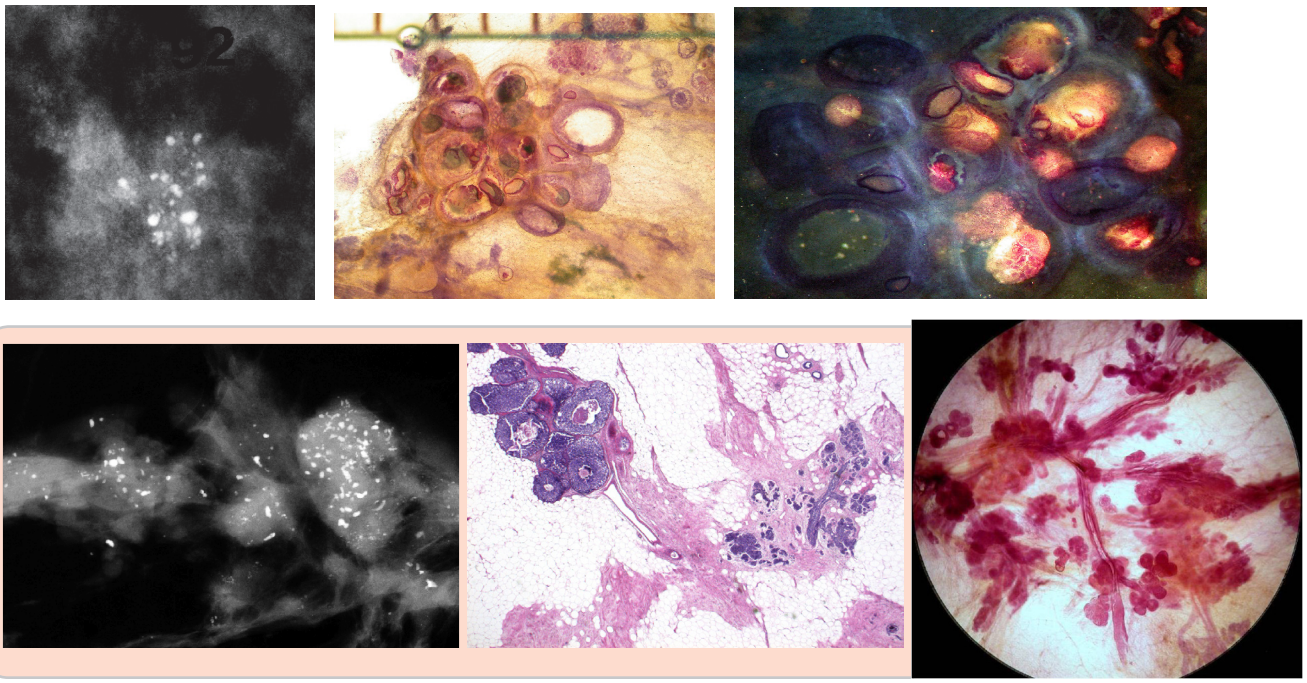


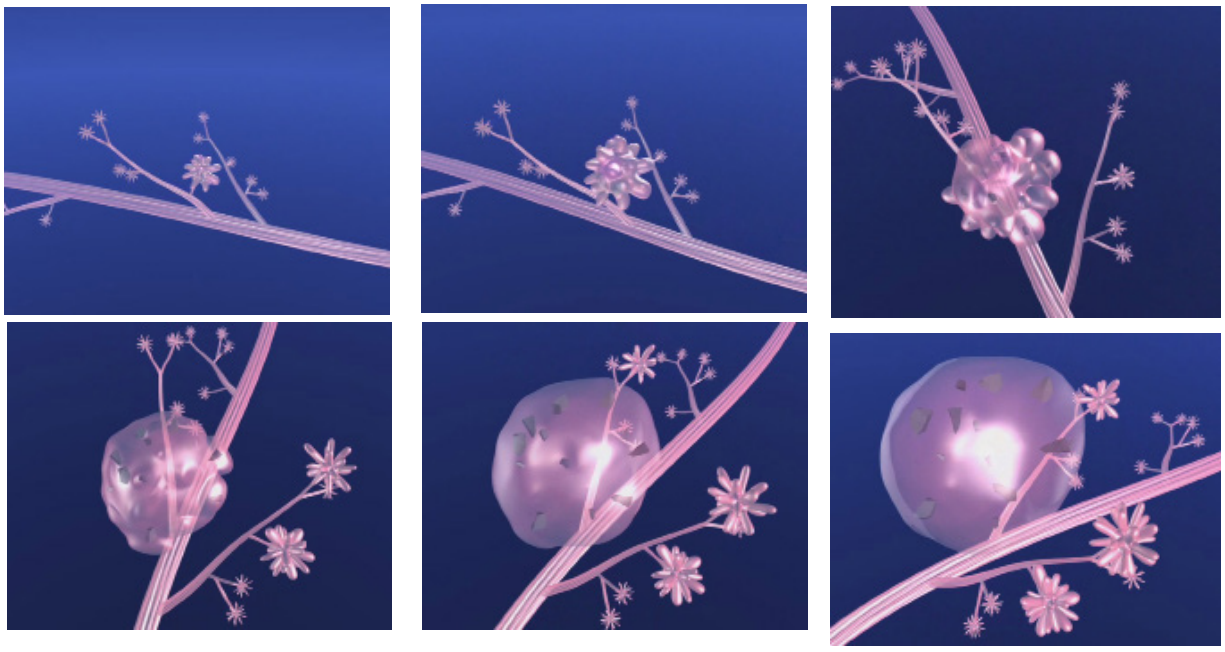
Grade 1 *in situ* carcinoma: Mammographic / 3D histologic / MRI correlation of cases with powdery calcifications on the mammogram.

- The morphologic analysis of calcifications representing a less aggressive carcinoma: Grade 1 / well differentiated CIS

4:30 End of the course

Mammographic / histopathologic correlation of pleomorphic calcifications representing Gr 2 CIS within the TDLU





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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Course Director

For more information and registration please contact:

xxxxxx
Phone: xxxxx,
Fax: yyyyyyy,
E-mail: xx@xxxx

Internet: www.xxxxxxxxxxx

A photograph from the collection of the non-profit Tabar Foundation dedicated to Research and Education for Breast Cancer

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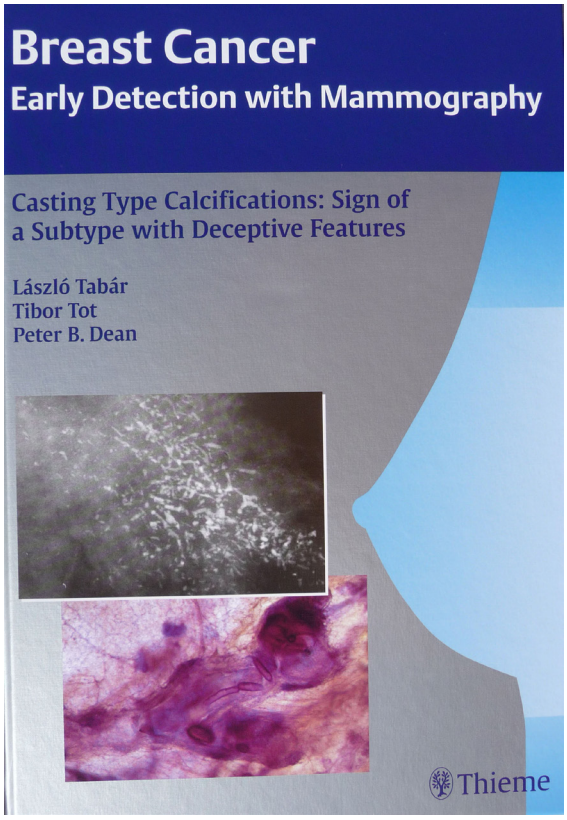
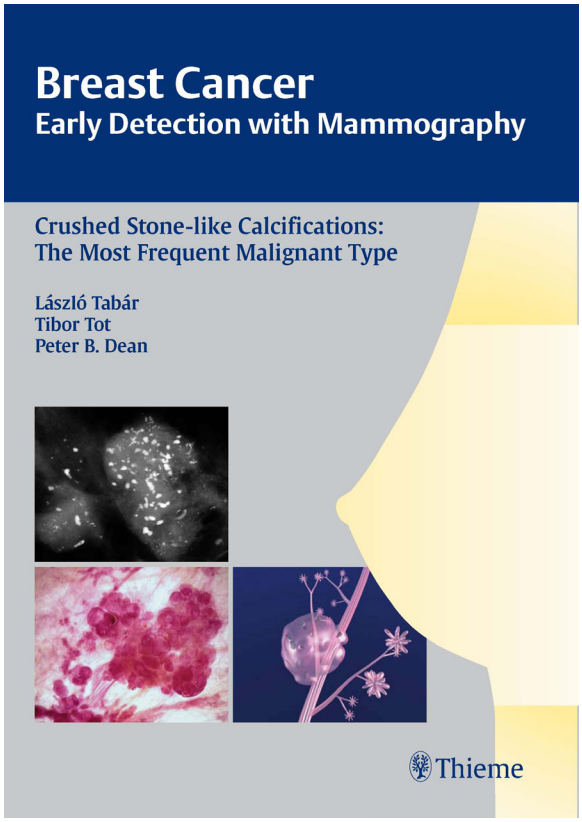
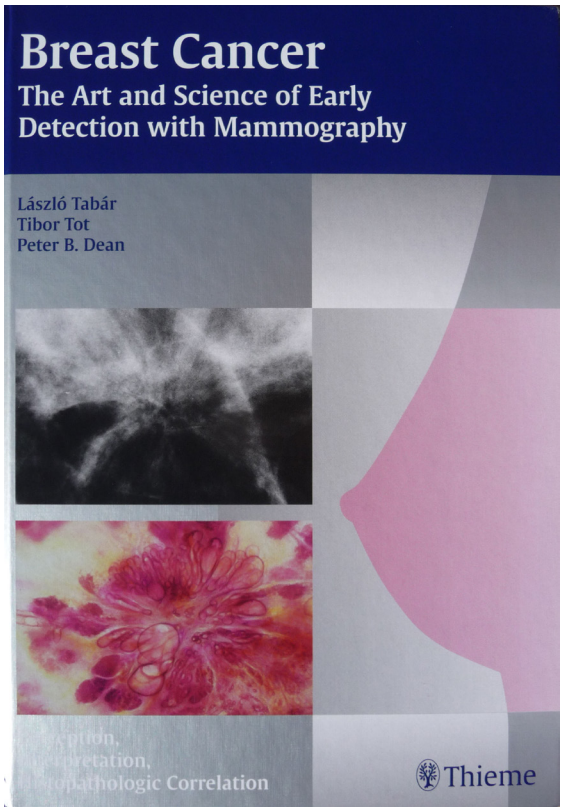
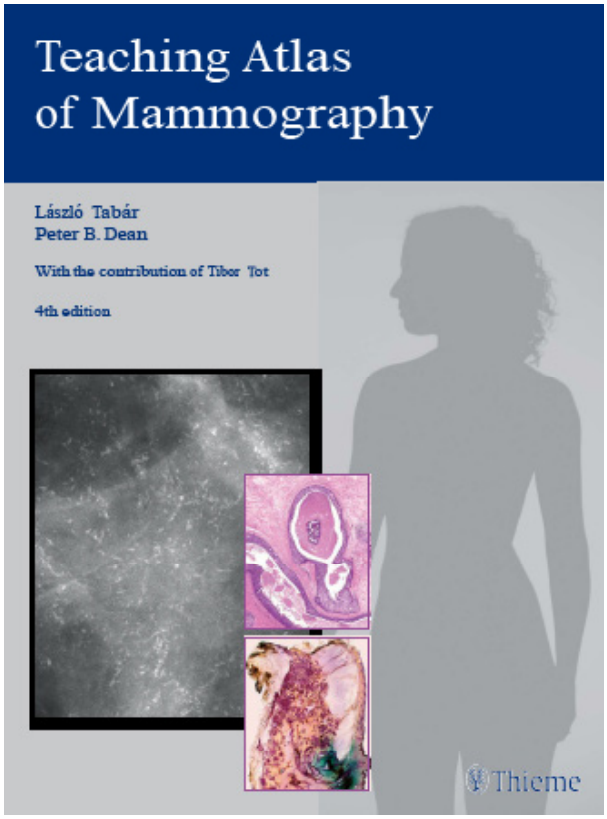




www.thieme.com





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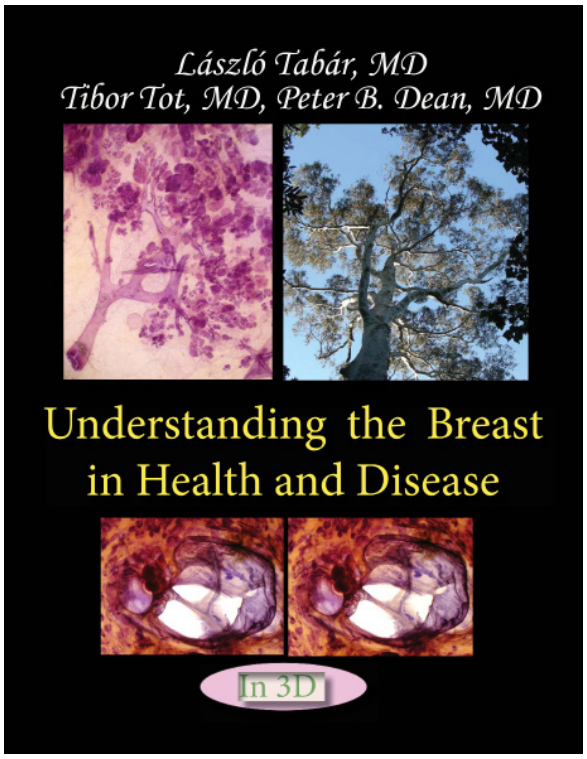
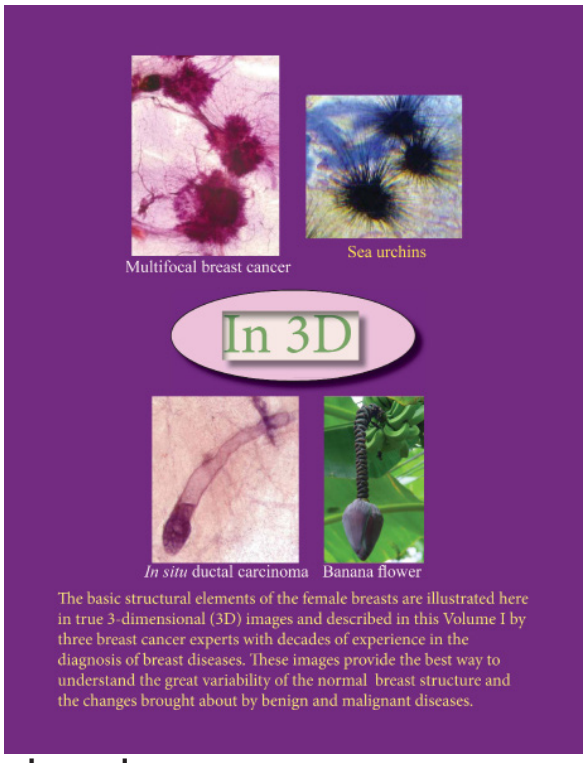
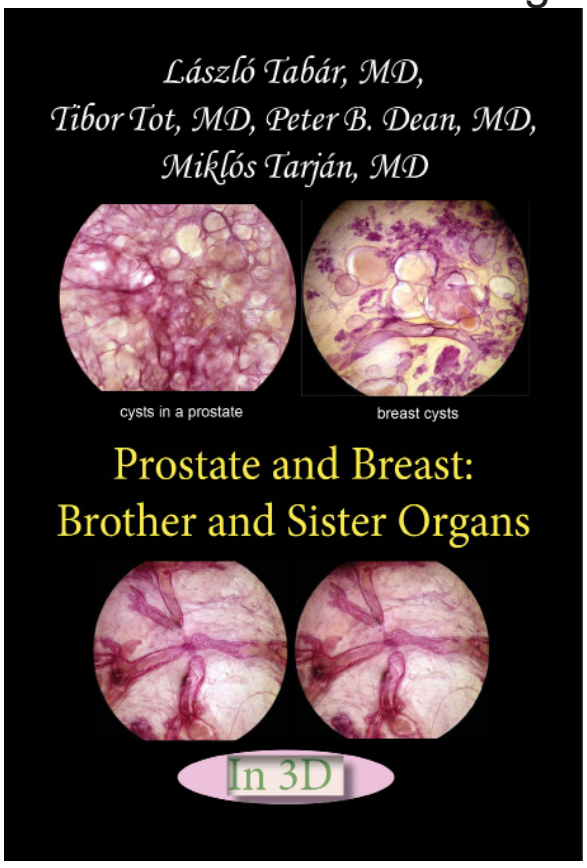
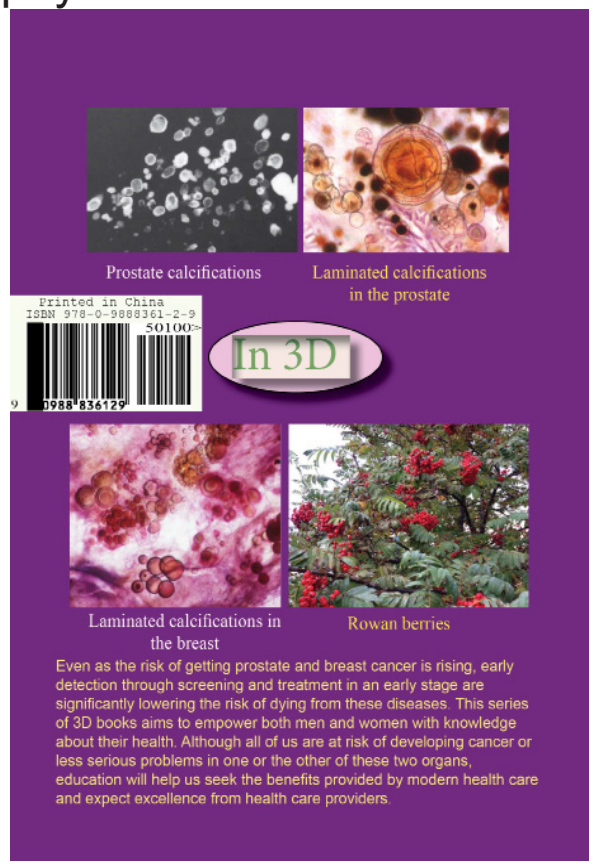




www.mammographyed.com





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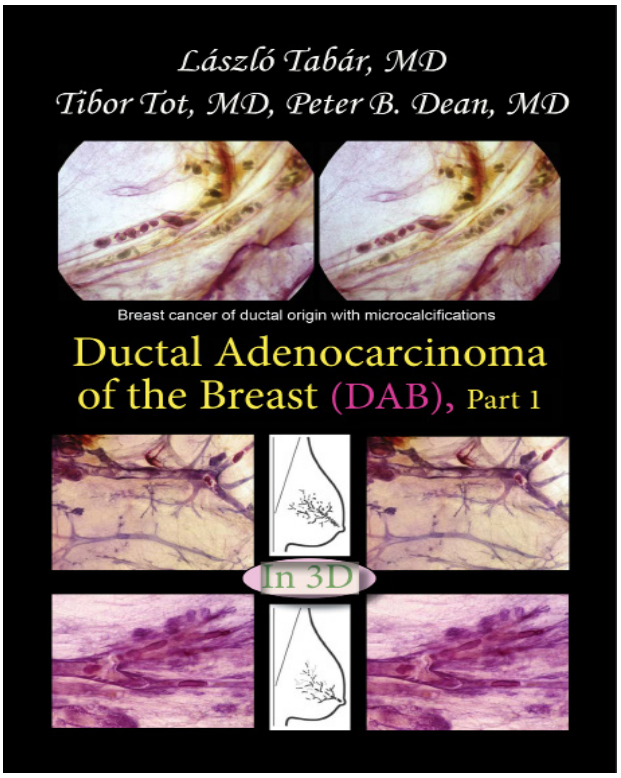

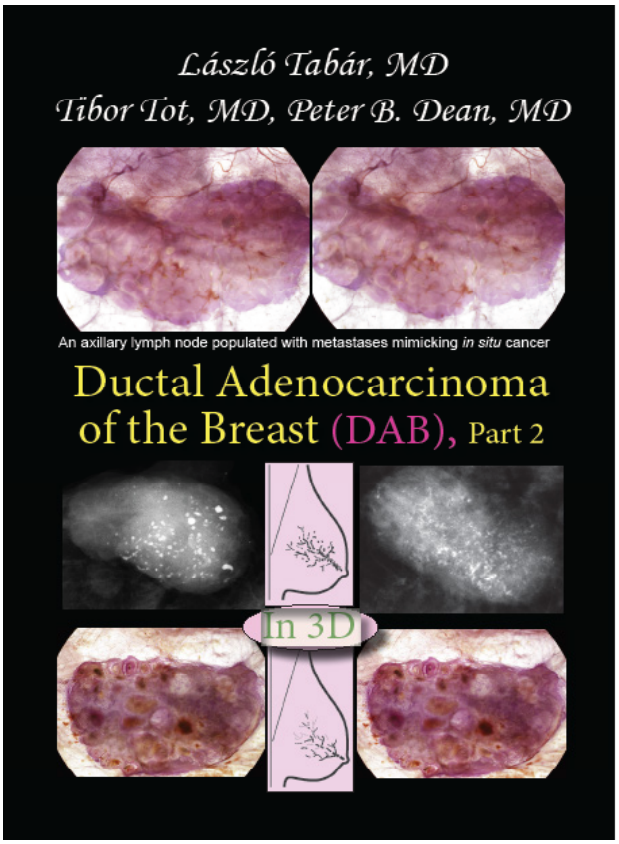

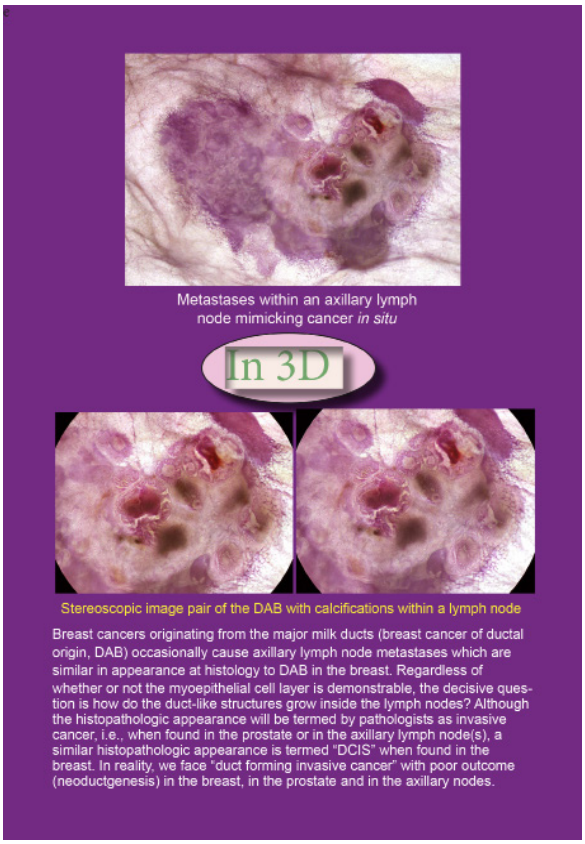

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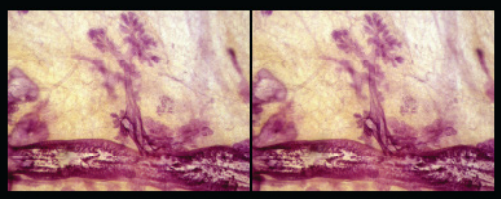
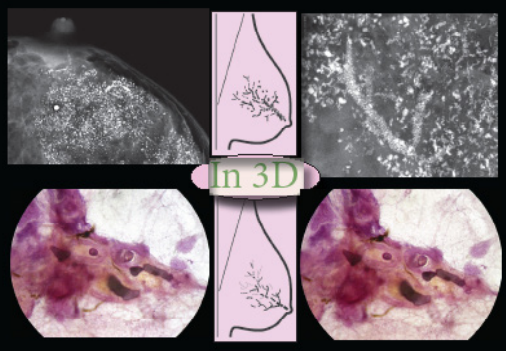
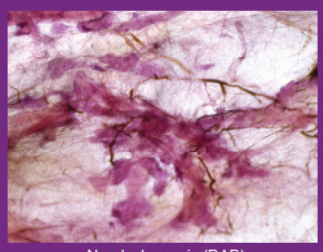


Micropapillary breast cancer of ductal origin associated with a normal TDLU

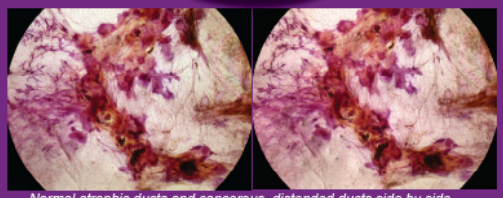
Ductal Adenocarcinoma of the Breast (DAB), Part 3





Neoductgenesis (DAB)
associated with angioneogenesis

In 3D



Normal atrophic ducts and cancerous, distended ducts side by side

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.

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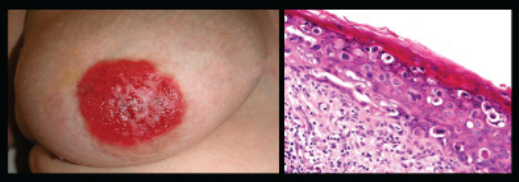
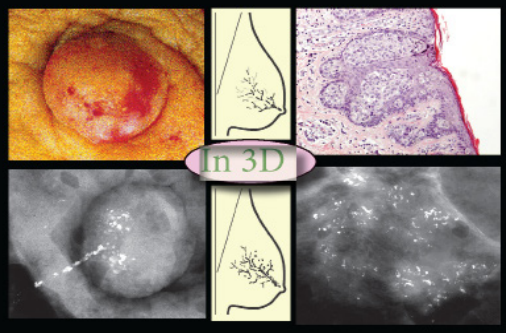
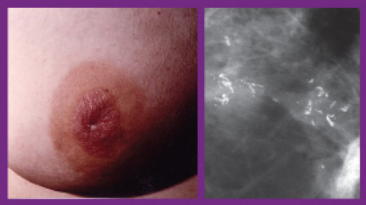


Paget's disease of the nipple | Paget's cells in the epidermis of the nipple

Ductal Adenocarcinoma of the Breast (DAB), Part 4





Paget's disease of the nipple and breast cancer of ductal origin

In 3D

Cancer-filled duct in Paget's disease with angioneogenesis

One of the features which is unique to breast cancers originating from the major ducts (DAB) is Paget's disease of the breast. It was first described by the British pathologist, James Paget in 1874. He described 14 cases of breast cancer associated with an eczema-like skin change of the nipple and areola. Almost 1% of all breast cancers present with Paget's disease of the nipple, and the diagnosis is confirmed by histologically demonstrating the Paget cells of the affected epidermis. The underlying breast cancer can be best demonstrated by combining all breast imaging methods. Of these, breast MRI is the most sensitive, showing the presence and true extent of the underlying DAB, often before calcifications can be detected on the mammogram.

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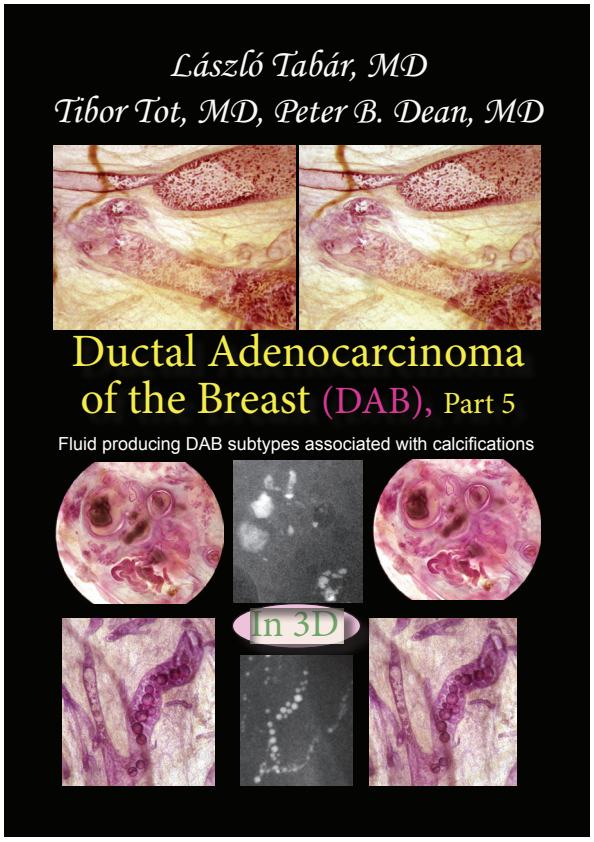

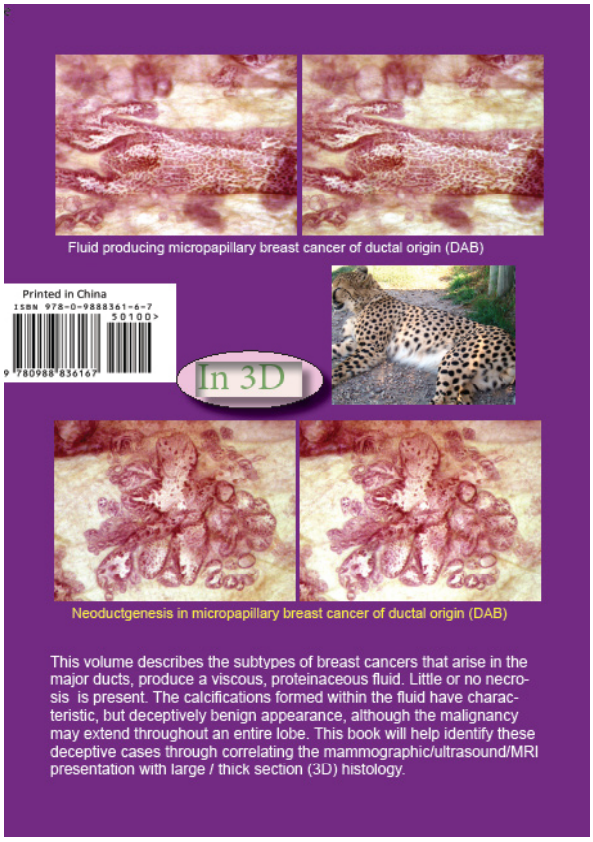

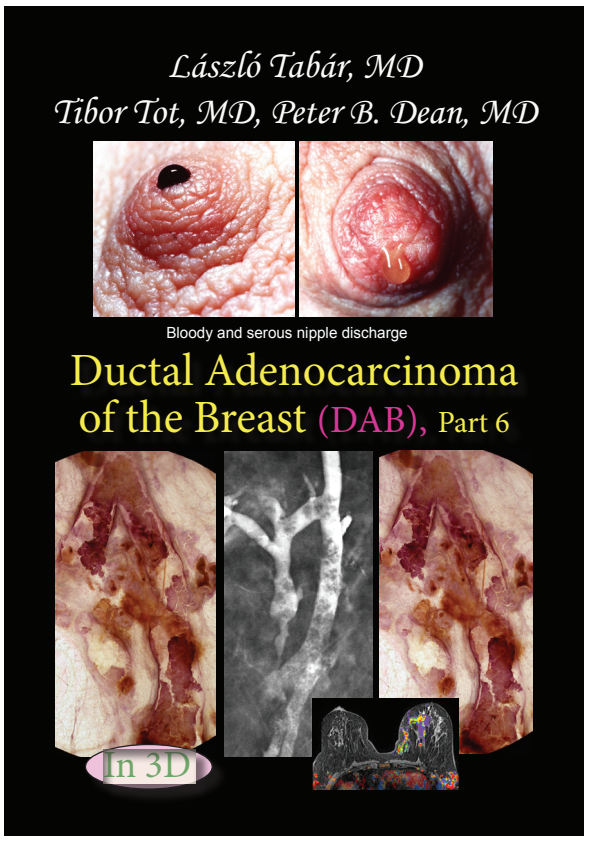

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