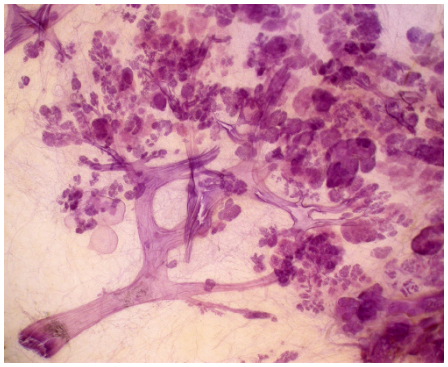
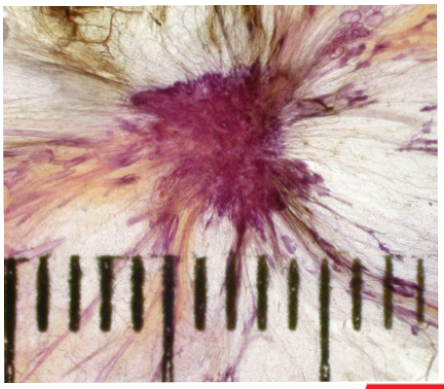


3D image of the breast tissue



<10 mm invasive breast cancer

Sea urchin

NEW course design

Mammography Education, Inc. and MedEvents

BREAST SEMINAR SERIES

Faculty

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

Detection and Diagnosis of Breast Diseases Using the Multimodality Approach

AN INTERACTIVE, UNIQUE LEARNING EXPERIENCE

May 13-15th, **2020.**

Golden Tulip Ana Dome Hotel
129 Observatorului St.
Cluj-Napoca - Romania

Designed for:
Radiologists • Surgeons • Pathologists
Gynecologists • Radiology Technologists

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).
Lecturer
Professor emeritus of Radiology,
Department of Mammography
Falun, Sweden

Photographs from the collection of the non-profit Tabar Foundation dedicated to Research and Education for Breast Cancer, Visit:
tabarfoundation.org

2020

Mammography Education, Inc & MedEvents

Detection and Diagnosis of Breast Diseases
Using the Multimodality Approach. An interactive course.

László Tabár, MD, FACR (Hon)
Course Director

NEW COURSE DESIGN

* The 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.

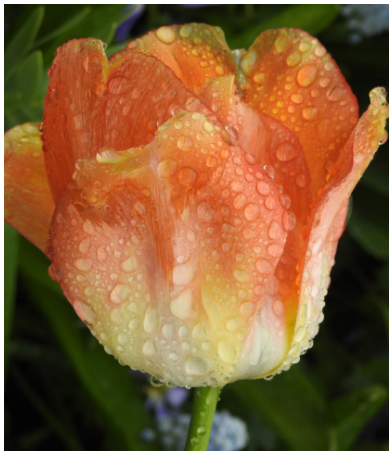
* These skills will lead to **fewer call-backs** and greater confidence in reading a large number of mammograms.

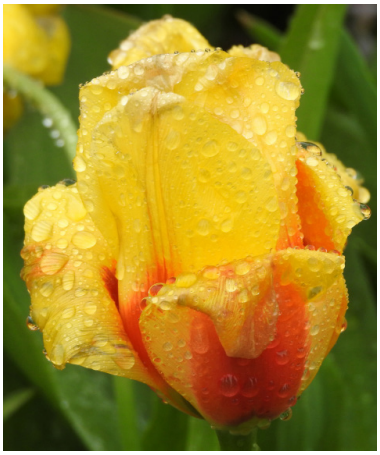
* **Immediate feedback** and discussion of every case throughout every reading session.

* 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 hand-held and automated breast ultrasound (ABUS), MRI and large section histopathology.**

* **Emphasis will be placed on classifying breast cancers according to their site of origin correlated to several decades long patient outcome.**





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2020

Mammography Education, Inc & MedEvents

Detection and Diagnosis of Breast Diseases
Using the Multimodality Approach. An interactive course.

László Tabár, MD, FACR (Hon)
Course Director

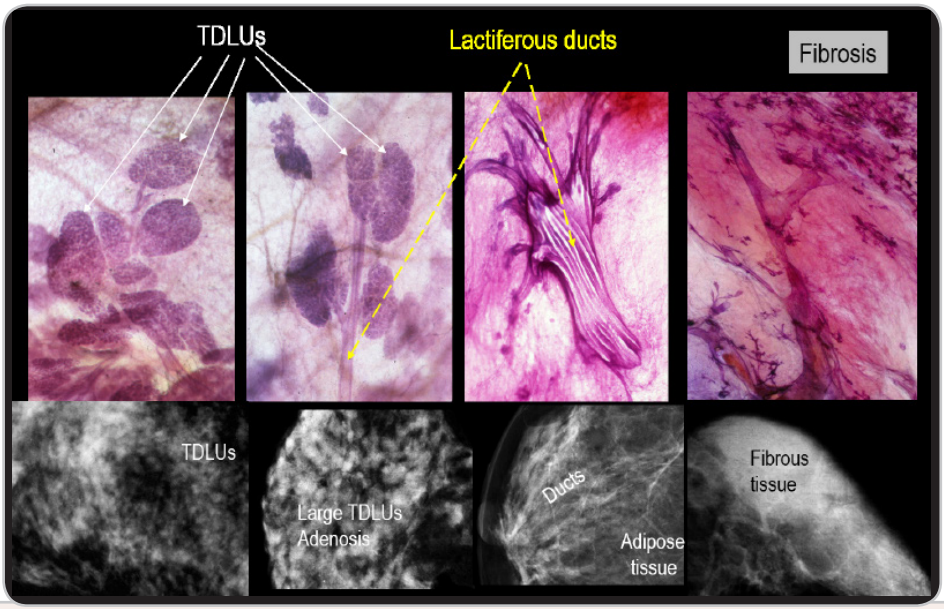
Day 1 Morning lectures between 8:30 AM and 12:00 PM. Break: 10:30 AM

9:00 AM INTRODUCTION FOLLOWED BY DIDACTIC LECTURES COVERING:

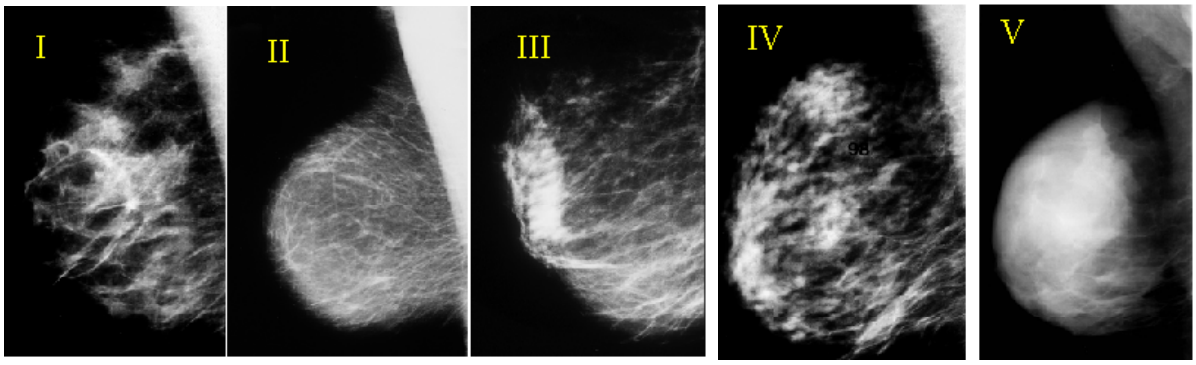
- A NEW ERA in the DIAGNOSIS and TREATMENT of BREAST CANCER. A SHORT HISTORY.

- **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. These images show the basic building blocks of the normal breast structure.**



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

2020

Mammography Education, Inc & MedEvents

Detection and Diagnosis of Breast Diseases
Using the Multimodality Approach. An interactive course.

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

1:00 PM ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

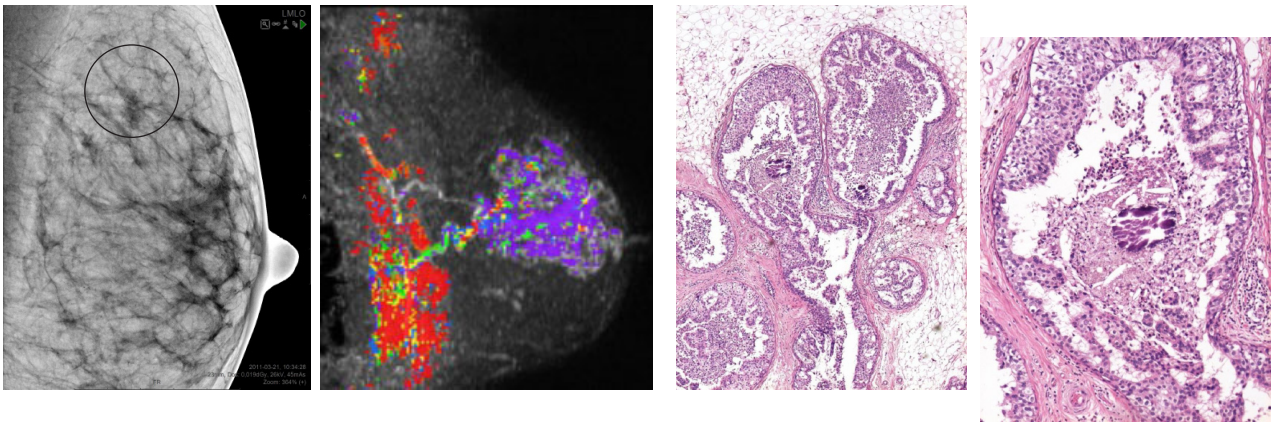
HOW TO FIND THE INVASIVE BREAST CANCER WHEN IT IS STILL SMALL. *Malignant stellate and circular/oval-shaped lesions originating from the TDLUs* **(AAB)**: clinical presentation, histology, mammographic - MRI - ultrasound appearance and outcome.

- **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 AAB and DAB (neoductgenesis) case, where the extensive micropapillary cancer originating from the major ducts was well demonstrated on breast MRI.

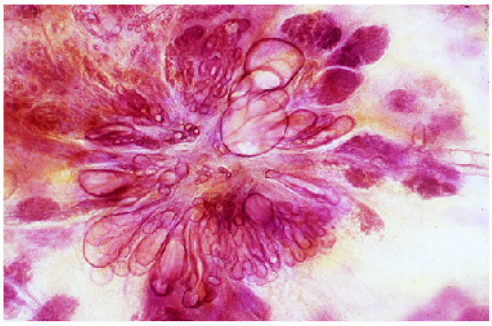
5:00 PM. End of Day 1.

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

8:30 AM ASYMMETRIC DENSITIES ON THE MAMMOGRAM

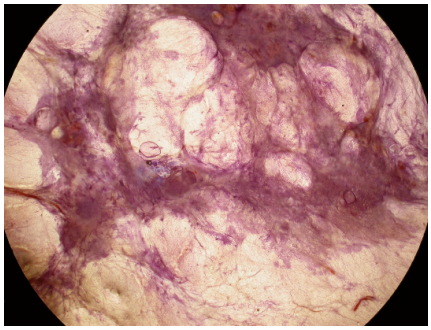
- *Didactic workup of non-specific asymmetric densities* **without** *architectural distortion*
- *Didactic workup of non-specific asymmetric densities* **with** *architectural distortion*

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



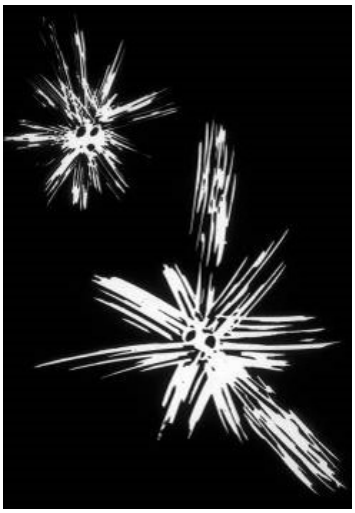
Radial scar

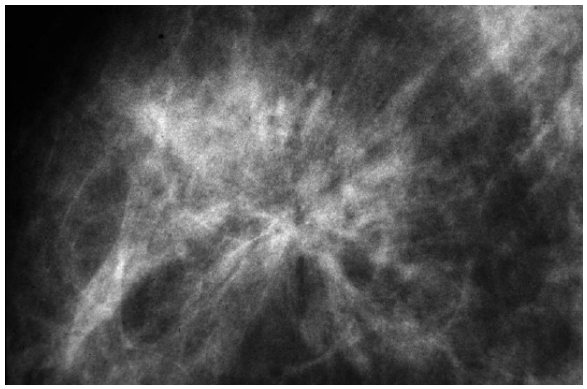
Neoductgenesis (DAB)

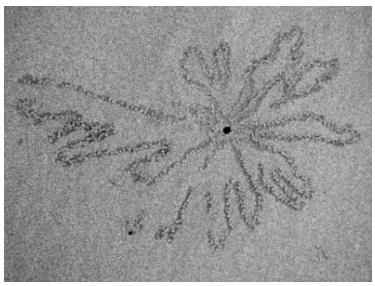


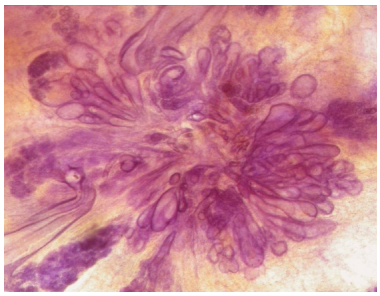
Diffusely infiltrating cancer of mesenchymal origin

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









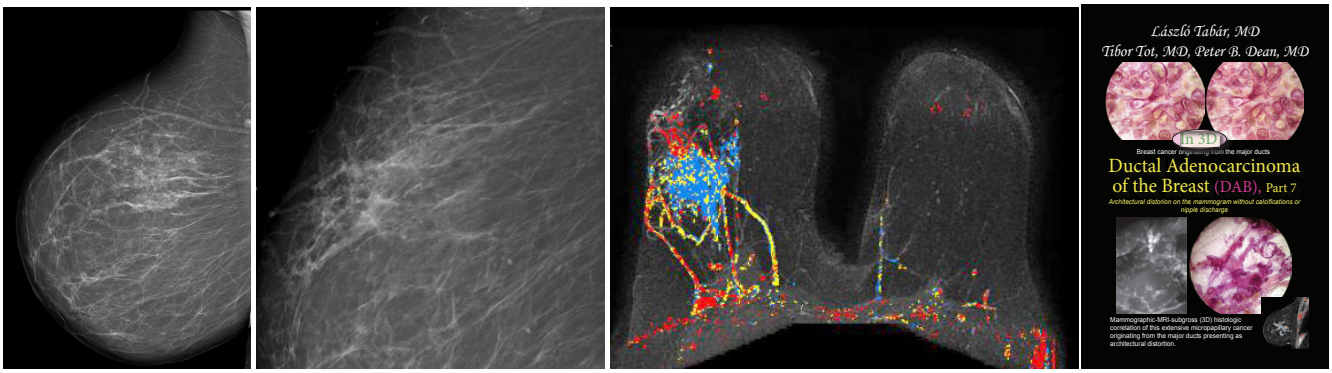
12:00 PM - 1:00 PM L u n c h

Day 2 Afternoon lectures: 1:00 PM - 4:30 PM. Breaks: 2:30 PM and 3:30 PM

1:00 PM ANALYSIS of MALIGNANT LESIONS PRESENTED as non-calcified RADIATING STRUCTURES on the mammogram. Clinical presentation, mammographic appearance and outcome.

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

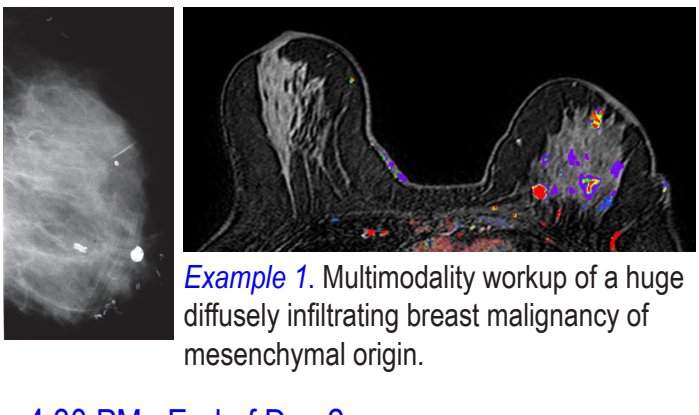
Interactive session for detecting architectural distortion on the mammogram.



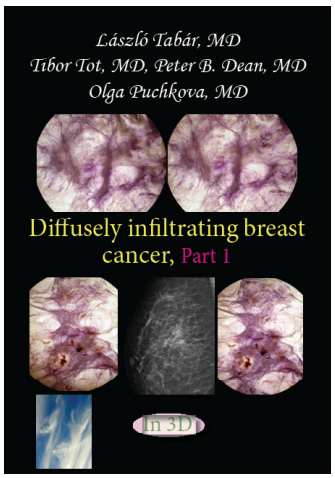
Non-calcified architectural distortion: extensive duct forming invasive cancer

2) ANALYSIS of MALIGNANT LESIONS PRESENTING as RADIATING STRUCTUREs on the mammogram. Clinical presentation, mammographic appearance and outcome, cont.

Diffusely infiltrating breast cancer of mesenchymal origin: the most deceptive and frequently missed cancer of the breast. The value of ultrasound and MRI in finding and diagnosing this spider's web-like malignancy. Case demonstrations, large section histopathologic-imaging correlation. Long-term outcome.



Example 1. Multimodality workup of a huge diffusely infiltrating breast malignancy of mesenchymal origin.



4:30 PM. End of Day 2.

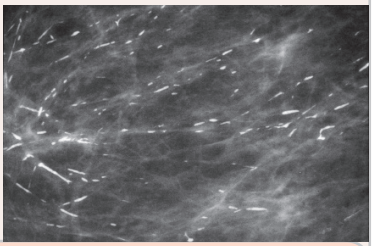
Day 3 Morning lectures: 8:00 AM and 12:00 PM. Breaks at 9:30 and 11:00 AM

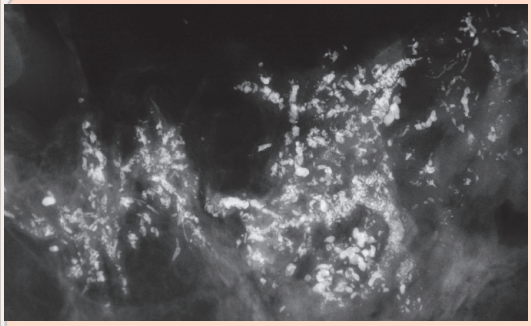
8:00 AM INTERACTIVE LECTURE SERIES WILL COVER THE FOLLOWING TOPICS.

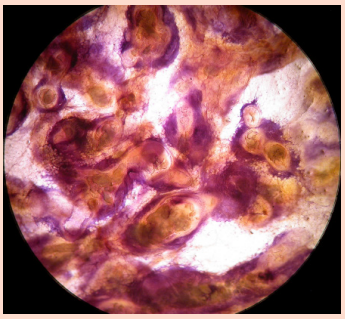
ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

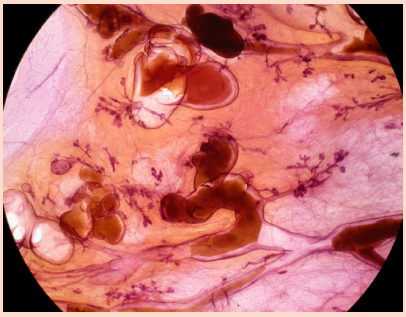
Breast diseases originating in the major ducts

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

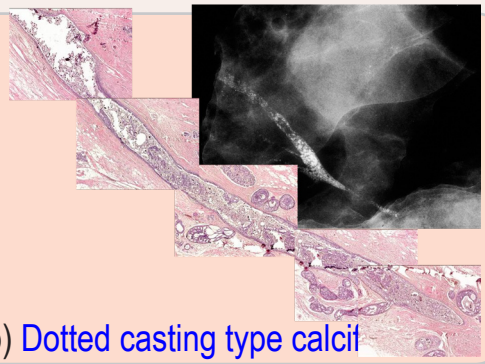






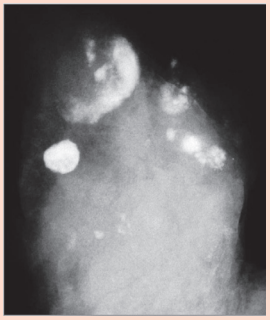


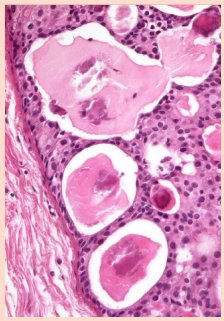
a) Fragmented casting type calcifications.



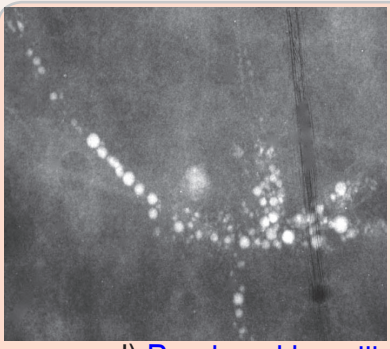
b) Dotted casting type calcif

* **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-

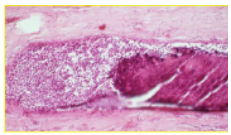
12:00 PM - 1:00 PM L u n c h

László Tabár, MD, FACR (Hon)
Course Director

Day 3 **Morning lectures** *continuation.*

MALIGNANT:
lecrosis, no fluid

Ductal Origin
Ca++ on the mammogram

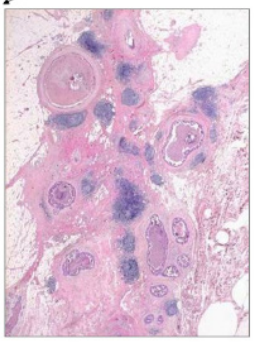


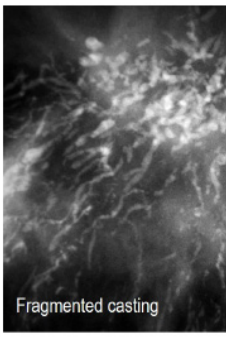
Ca++ in necrosis

Type 1
FRAGMENTED CASTING
solid bars)

Diffuse, lobar lisease

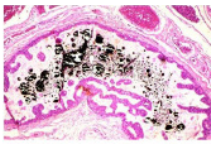
Grade III
solid cell proliferation





MALIGNANT:
Necrosis, no fluid

Ductal Origin
Ca++ on the mammogram



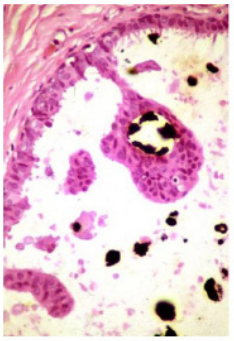
Ca++ in necrosis

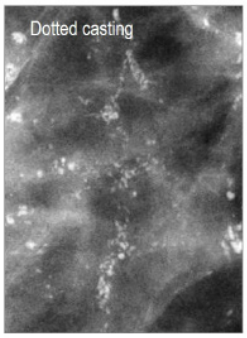
Type 2
DOTTED CASTING-TYPE
(snakeskin-like)

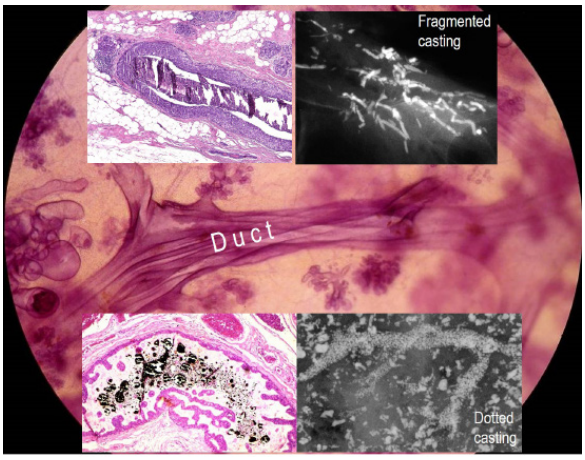
-Diffuse, lobar disease

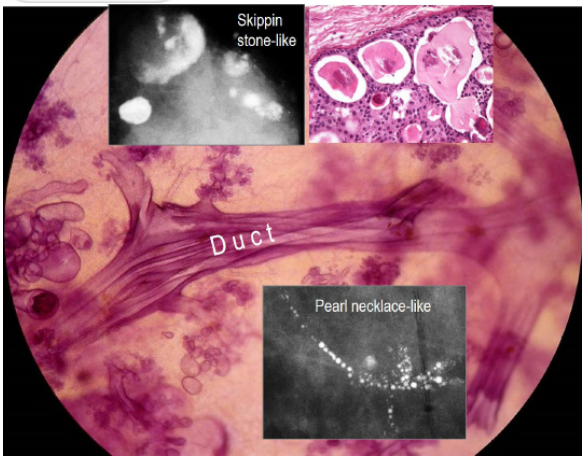
- Grade III

-micropapillary cell proliferation





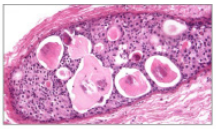




Interactive calcification analysis.

MALIGNANT:
No necrosis, fluid

Ductal Origin
Ca++ on the mammogram



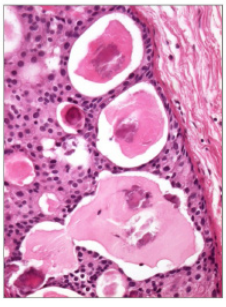
Ca++ in proteinaceous fluid

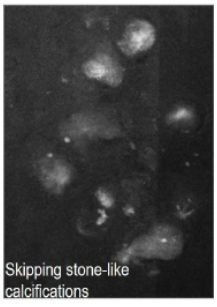
Type 3
"DISCOID"
(skipping stone-like)

-Diffuse lobar disease

-Grade II

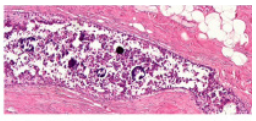
-Micropapillary or/and cribriform





MALIGNANT:
No necrosis, fluid

Ductal Origin
Ca++ on the mammogram



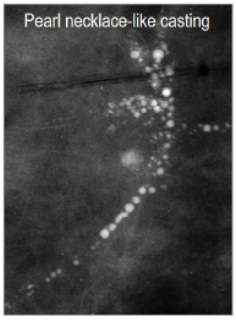
Ca++ in proteinaceous fluid

Type 4
"PEARL NECKLACE"

-large psammoma body-like calcifications within ducts

-Grade I or/and 2

- Micropapillary, cribriform.



Day 3 Afternoon lectures: 1:00 PM - 4:30 PM. Break at 3:30 PM

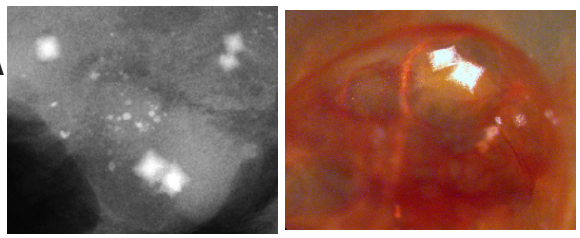
1:00 PM ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

- **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.

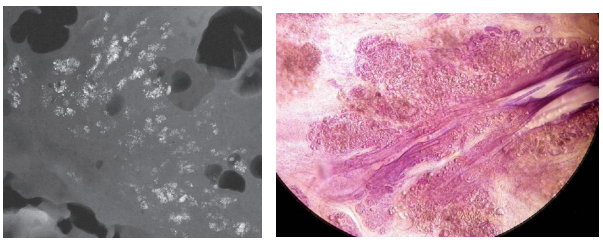
Conventional and 3D histology images of small breast cysts containing sediment of psammoma body-like calcifications, seen as "teacup-like calcifications on the mammogram.

- Detailed analysis of calcifications associated with hyperplastic breast changes: Weddellites (A), powdery calcifications (B), cluster skipping stone-like calcifications on the mammogram.

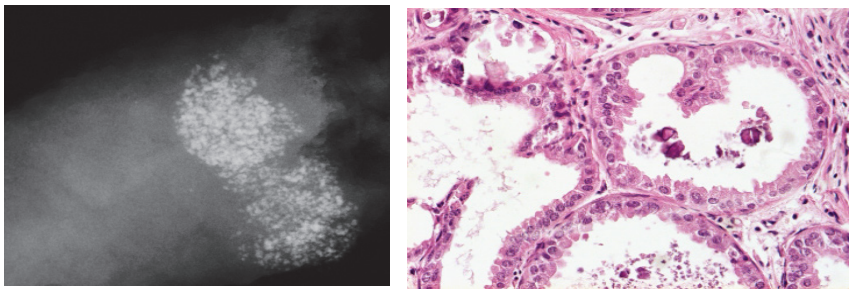
A



B



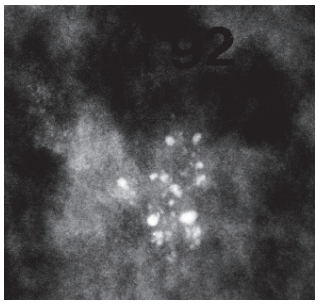
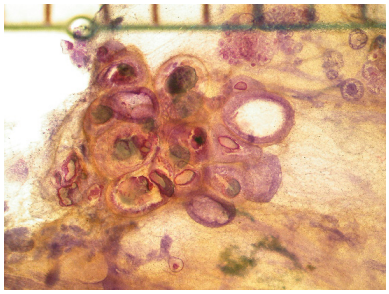
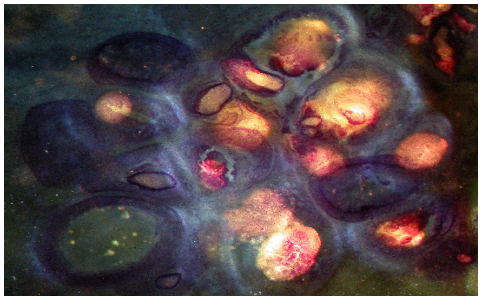
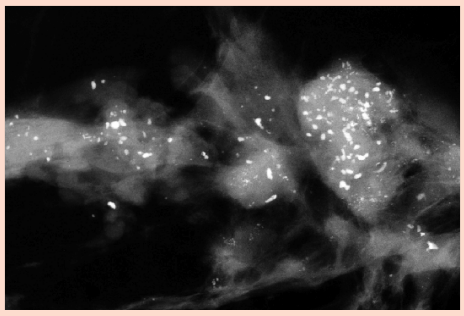
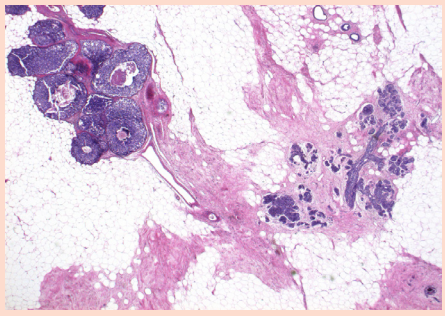
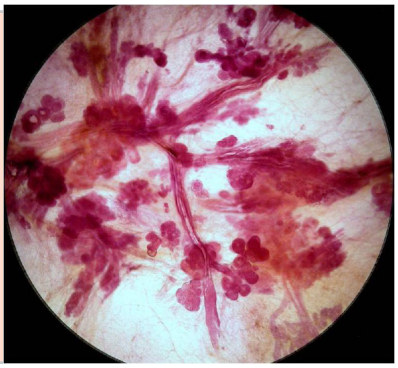
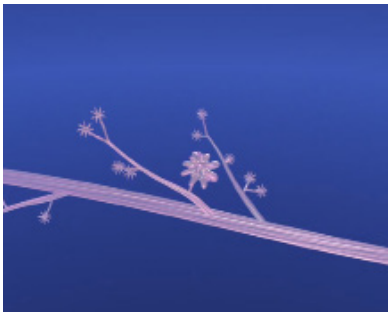
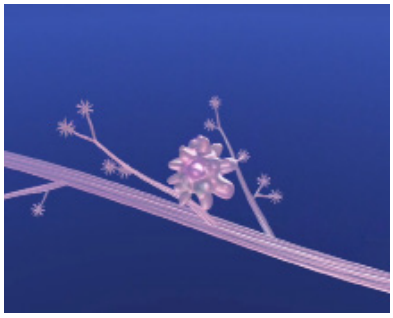
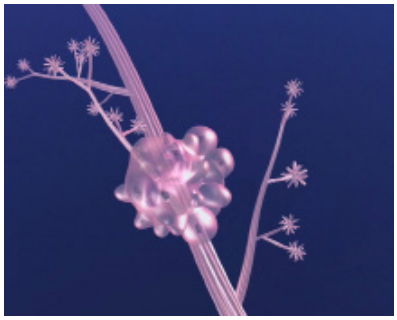
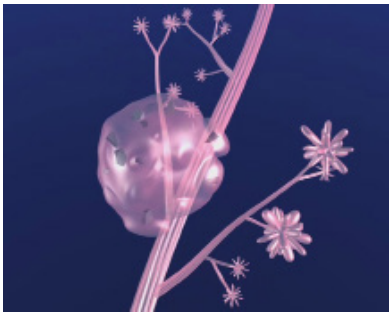
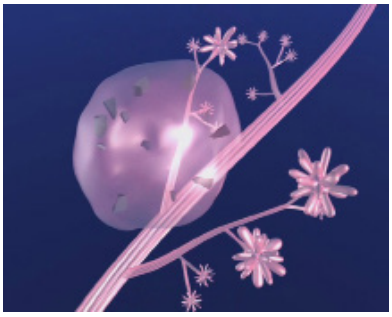
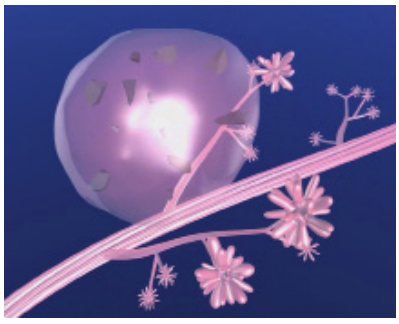
- The morphologic analysis of calcifications representing a less aggressive carcinoma: Grade 1 / well differentiated CIS



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

Day 3 Afternoon lectures: 1:00 PM - 4:30 PM. Break at 3:30 PM

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**.

4:30 End of the course

László Tabár, MD, FACR (Hon)
Course Director

For more information and registration please contact:

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MedEvents
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Fax: +40 364 108 990
e-mail: breastdiseases@medevents.ro
Internet: http://breastdiseases.medevents.ro/

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

2020

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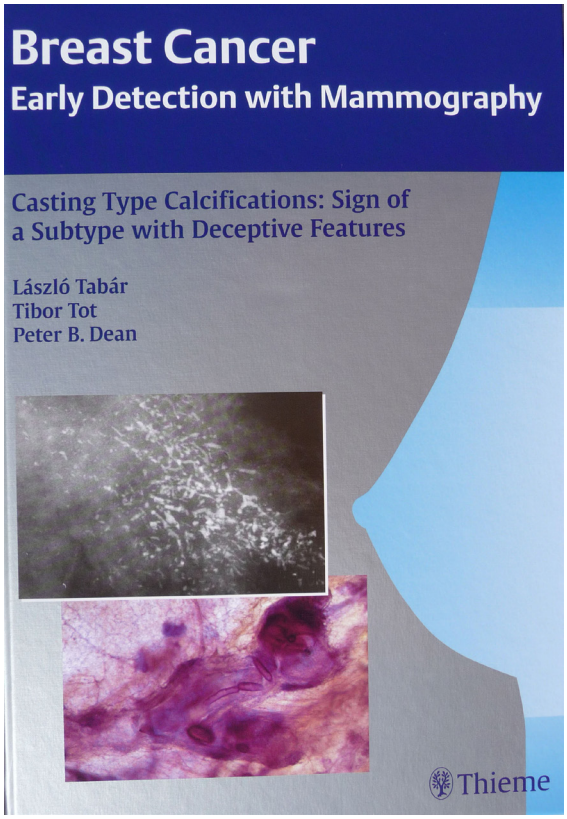
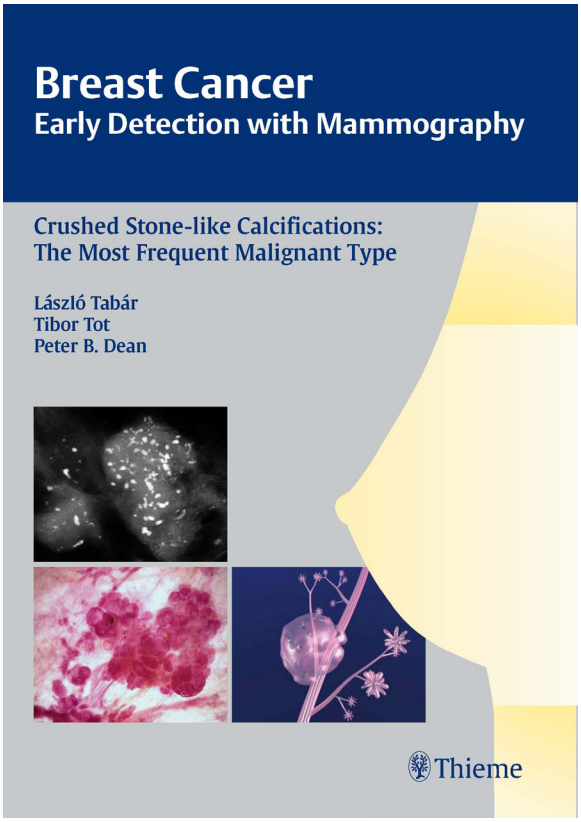
László Tabár, MD, FACR (Hon)
Course Director

Detection and Diagnosis of Breast Diseases
Using the Multimodality Approach. An interactive course.





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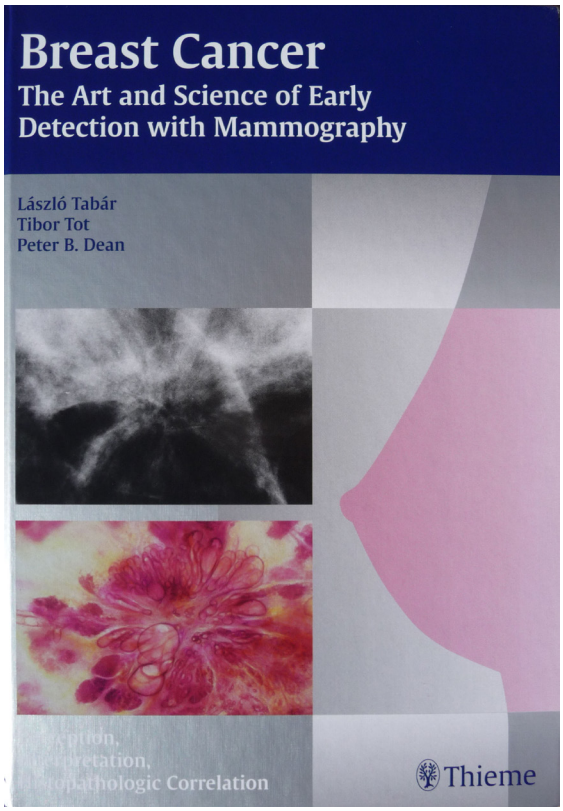
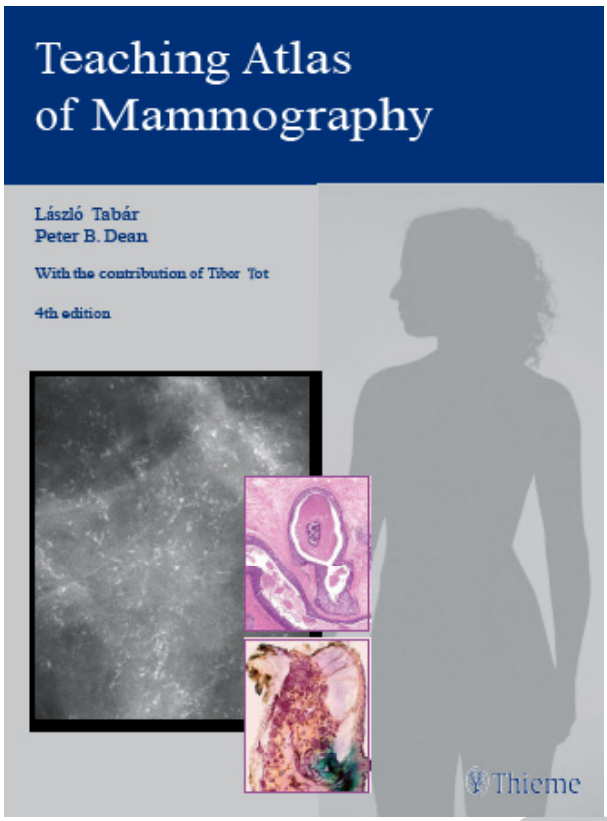
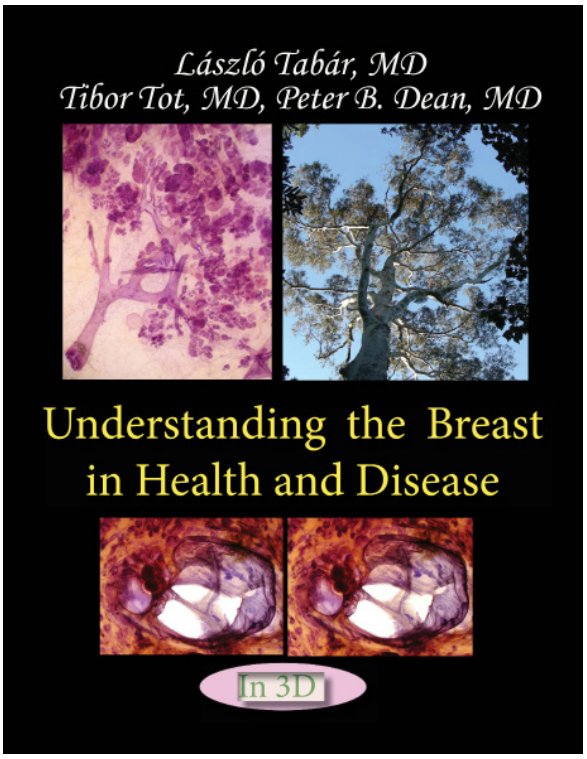
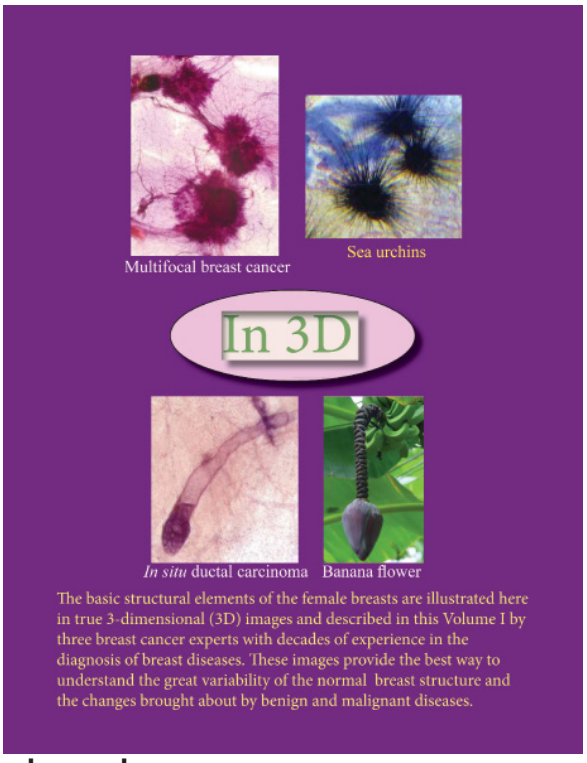
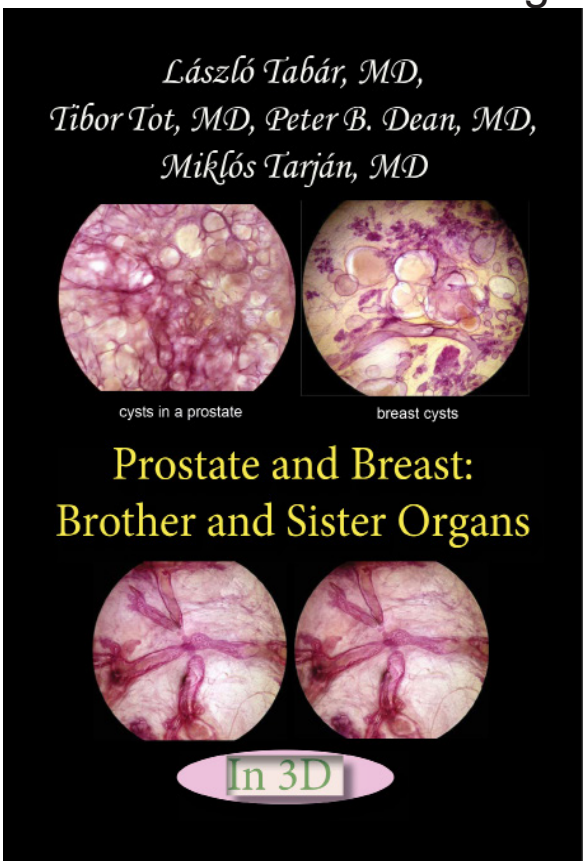
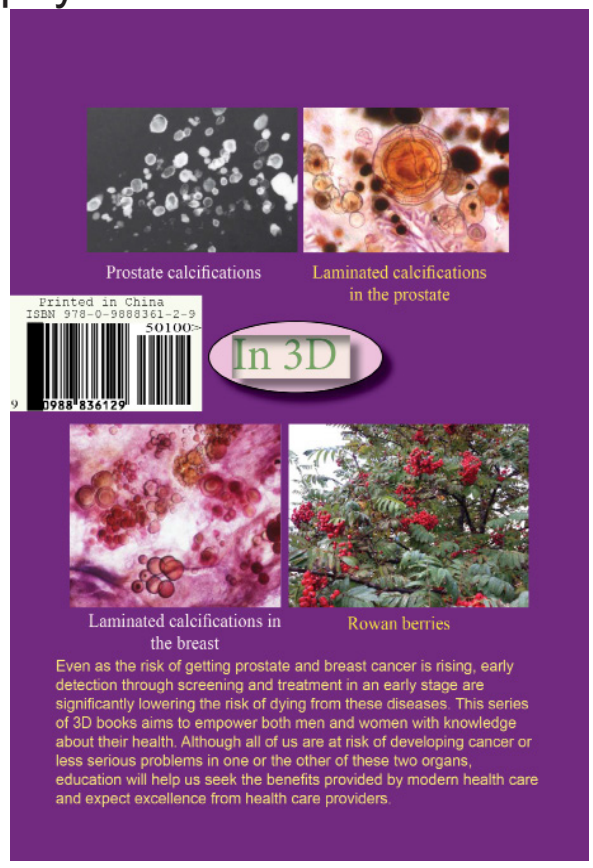


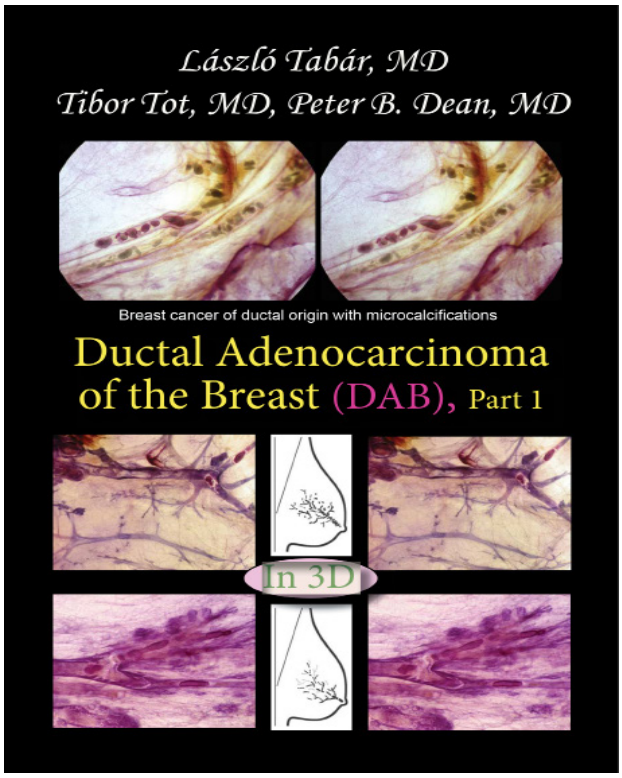




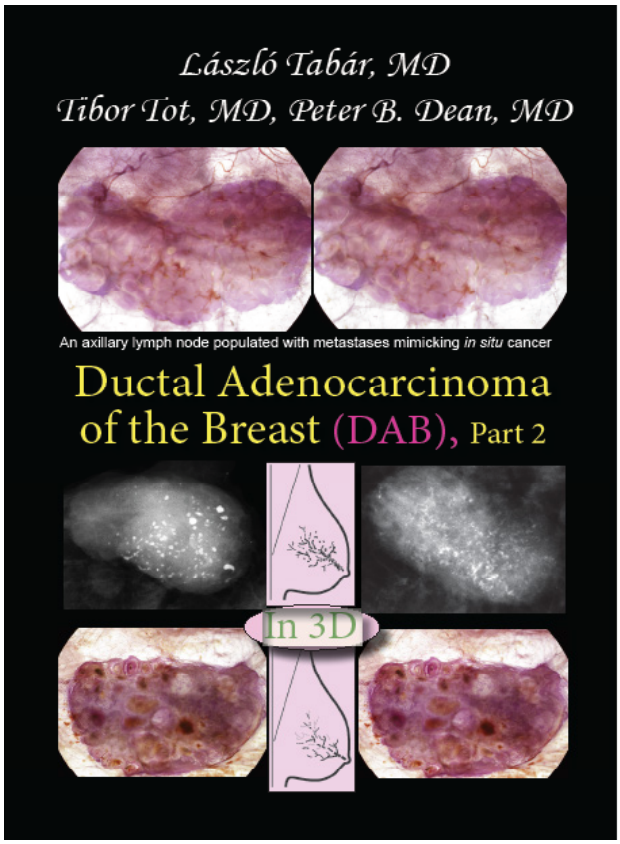


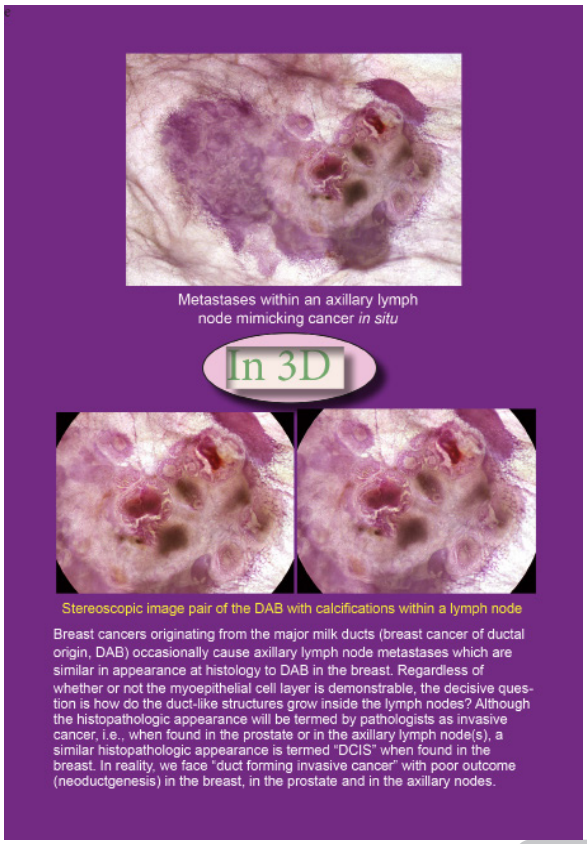




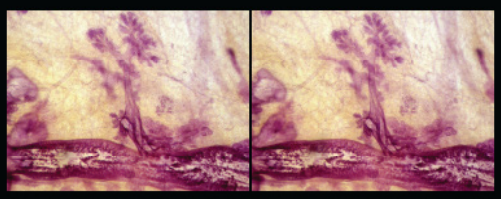

László Tabár, MD
Tibor Tot, MD, Peter B. Dean, MD
Breast cancer of ductal origin with microcalcifications
Ductal Adenocarcinoma of the Breast (DAB), Part 1
In 3D


8 mm poorly differentiated invasive breast cancer associated with neoductgenesis (DAB)
A photograph reminiscent of neoductgenesis with associated tiny invasive tumors
In 3D
Fragmented casting type calcifications make the cancerous duct-like structures visible on the mammogram.
Neoductgenesis is a frequent phenomenon in the plant world
The mammogram is a true representation of the structural changes induced by the genetic constellation of each breast cancer subtype. The mammographic/MRI/ultrasound presentation of a particular subtype reflects the nature and extent of the underlying disease process, and when correctly interpreted, can guide patient management and help in predicting the long-term outcome. This information is available at the moment of diagnosis, without the additional expense and time necessary for molecular and immunohistochemical analysis.


László Tabár, MD
Tibor Tot, MD, Peter B. Dean, MD
An axillary lymph node populated with metastases mimicking *in situ* cancer
Ductal Adenocarcinoma of the Breast (DAB), Part 2
In 3D

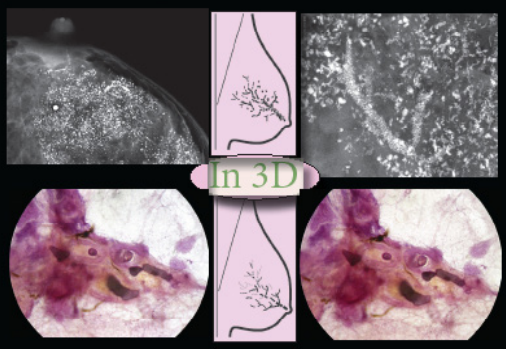

Metastases within an axillary lymph node mimicking cancer *in situ*
In 3D
Stereoscopic image pair of the DAB with calcifications within a lymph node
Breast cancers originating from the major milk ducts (breast cancer of ductal origin, DAB) occasionally cause axillary lymph node metastases which are similar 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 inside 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 node(s), a similar histopathologic appearance is termed "DCIS" when found in the breast. In reality, we face "duct forming invasive cancer" with poor outcome (neoductgenesis) in the breast, in the prostate and in the axillary nodes.

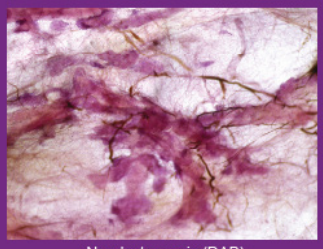
László Tabár, MD
Tibor Tot, MD, Peter B. Dean, MD



Micropapillary breast cancer of ductal origin associated with a normal TDLU

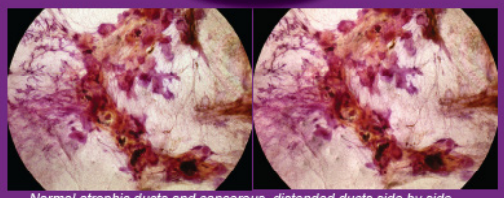
Ductal Adenocarcinoma of the Breast (DAB), Part 3





Neoductgenesis (DAB)
associated with angioneogenesis

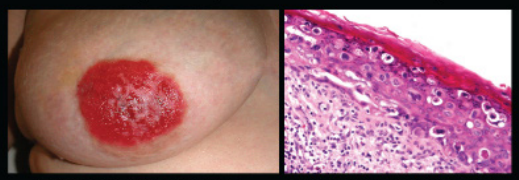
In 3D



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.

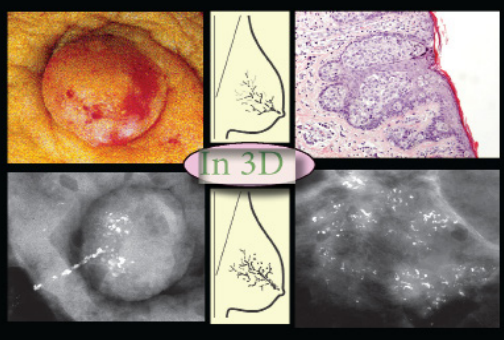
László Tabár, MD
Tibor Tot, MD, Peter B. Dean, MD

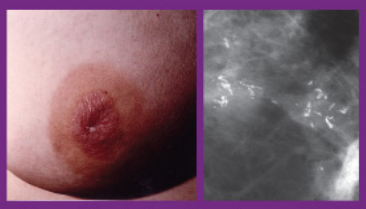


Paget's disease of the nipple

Paget's cells in the epidermis of the nipple

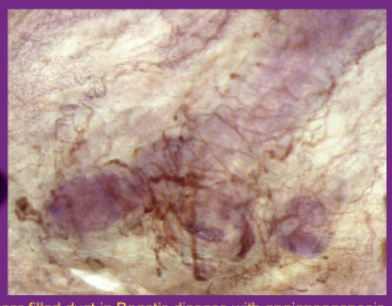
Ductal Adenocarcinoma of the Breast (DAB), Part 4





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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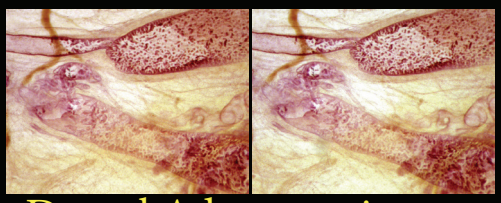
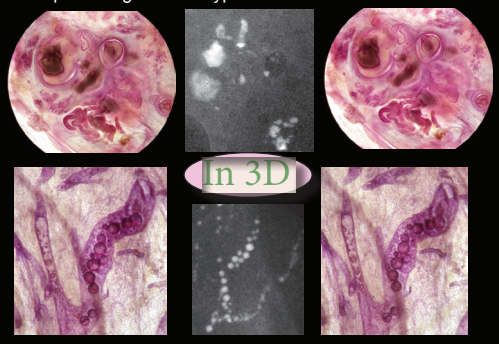
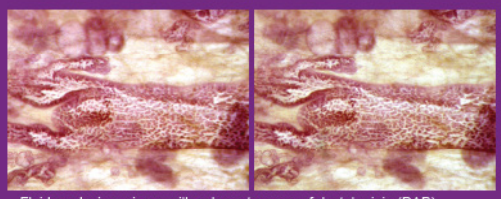
Tibor Tot, MD, Peter B. Dean, MD



Ductal Adenocarcinoma of the Breast (DAB), Part 5

Fluid producing DAB subtypes associated with calcifications





Fluid producing micropapillary breast cancer of ductal origin (DAB)

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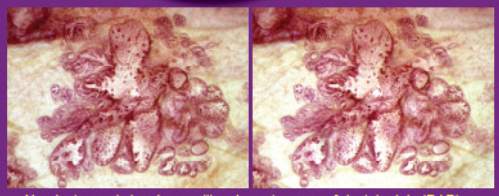


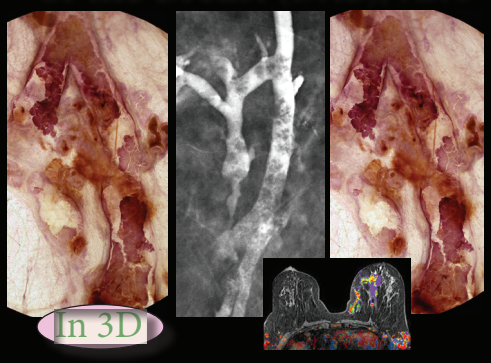
Neoductgenesis in micropapillary breast cancer of ductal origin (DAB)

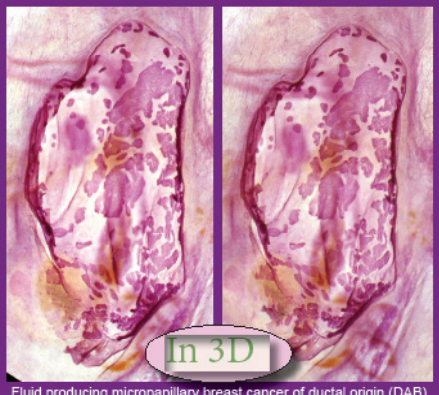
This volume describes the subtypes of breast cancers that arise in the major ducts, produce a viscous, proteinaceous fluid. Little or no necrosis is present. The calcifications formed within the fluid have characteristic, but deceptively benign appearance, although the malignancy may extend throughout an entire lobe. This book will help identify these deceptive cases through correlating the mammographic/ultrasound/MRI presentation with large / thick section (3D) histology.

László Tabár, MD
Tibor Tot, MD, Peter B. Dean, MD

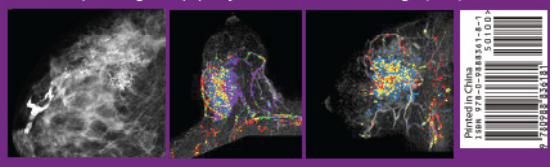
Bloody and serous nipple discharge

Ductal Adenocarcinoma of the Breast (DAB), Part 6





Fluid producing micropapillary breast cancer of ductal origin (DAB)



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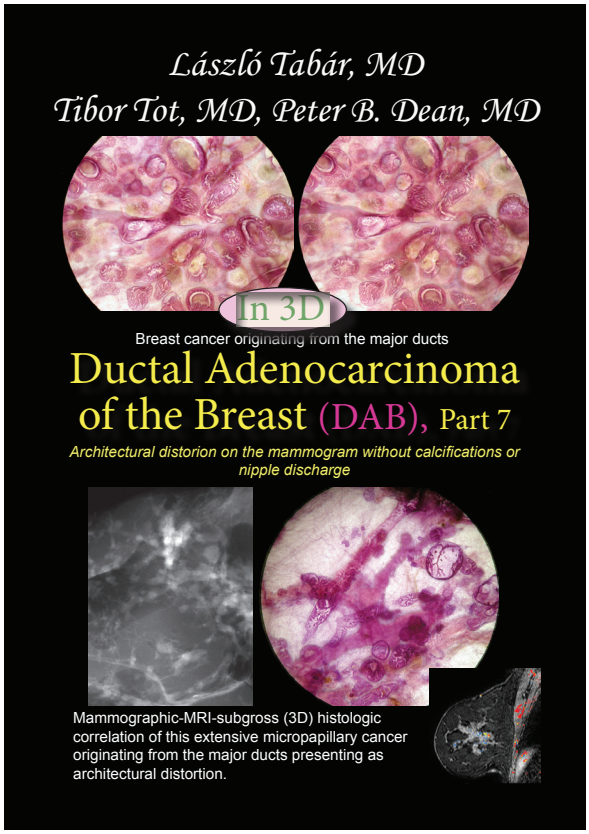
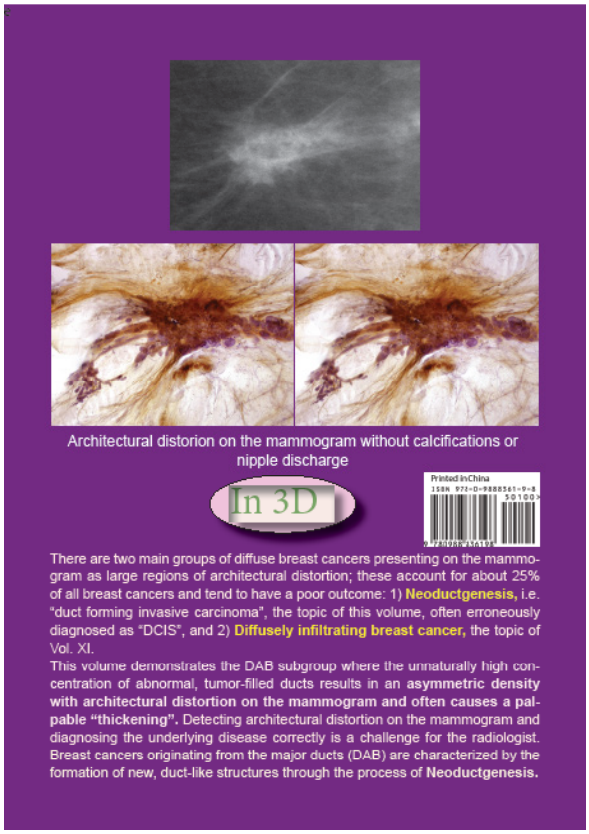
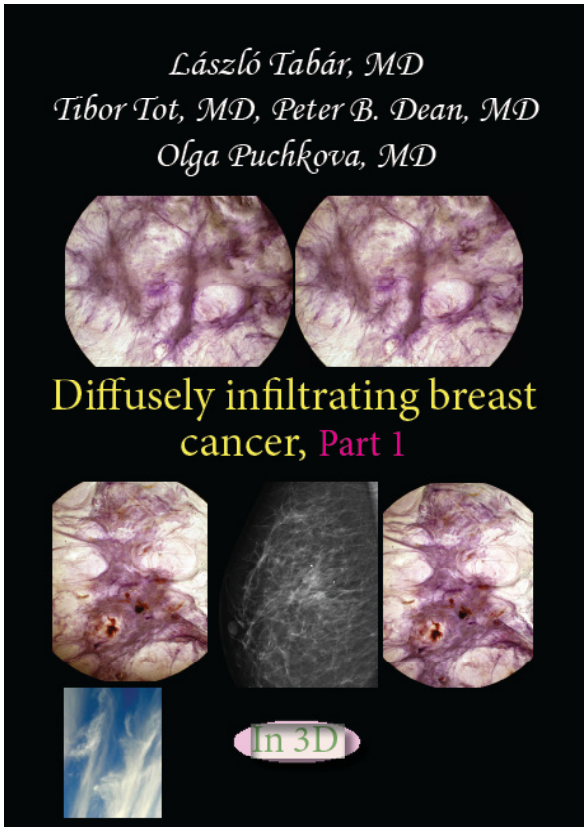
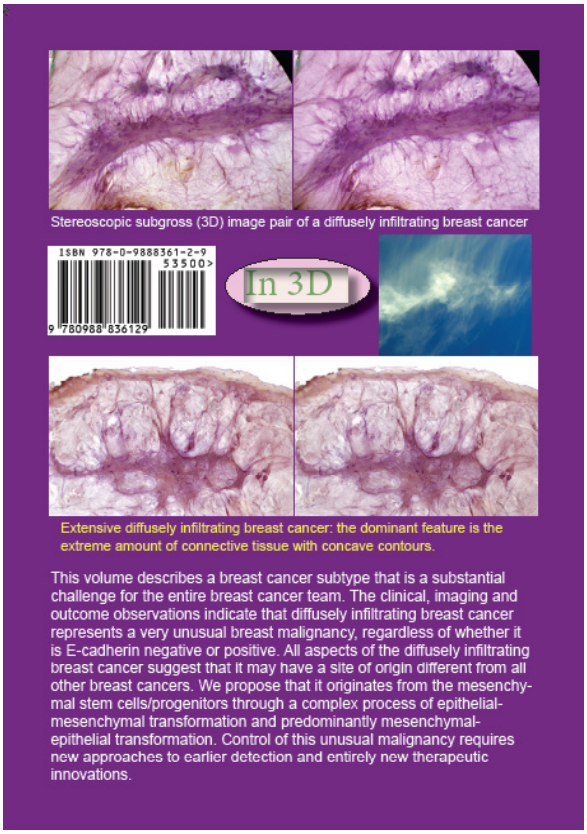
Spontaneous unilateral **serous or bloody nipple discharge** can be an alarming clinical symptom for the patient and also, it may cause considerable differential diagnostic problem for the radiologist. This volume of our 3D book series correlates the imaging findings (mammography / breast ultrasound / breast MRI) with large thin- and large thick section (subgross, 3D) histology in cases when the underlying cause of the discharge is fluid-producing breast cancer originating from the major ducts (DAB).


László Tabár, MD
Tibor Tot, MD, Peter B. Dean, MD
In 3D
Breast cancer originating from the major ducts
Ductal Adenocarcinoma of the Breast (DAB), Part 7
Architectural distorion on the mammogram without calcifications or nipple discharge
Mammographic-MRI-subgross (3D) histologic correlation of this extensive micropapillary cancer originating from the major ducts presenting as architectural distortion.


Architectural distorion on the mammogram without calcifications or nipple discharge
In 3D
There are two main groups of diffuse breast cancers presenting on the mammogram as large regions of architectural distortion; these account for about 25% of all breast cancers and tend to have a poor outcome: 1) Neoductgenesis, i.e. "duct forming invasive carcinoma", the topic of this volume, often erroneously diagnosed as "DCIS", and 2) Diffusely infiltrating breast cancer, the topic of Vol. XI.
This volume demonstrates the DAB subgroup where the unnaturally high concentration of abnormal, tumor-filled ducts results in an asymmetric density with architectural distortion on the mammogram and often causes a palpable "thickening". Detecting architectural distortion on the mammogram and diagnosing the underlying disease correctly is a challenge for the radiologist. Breast cancers originating from the major ducts (DAB) are characterized by the formation of new, duct-like structures through the process of Neoductgenesis.


László Tabár, MD
Tibor Tot, MD, Peter B. Dean, MD
Olga Puchkova, MD
Diffusely infiltrating breast cancer, Part 1
In 3D


Stereoscopic subgross (3D) image pair of a diffusely infiltrating breast cancer
In 3D
Extensive diffusely infiltrating breast cancer: the dominant feature is the extreme amount of connective tissue with concave contours.
This volume describes a breast cancer subtype that is a substantial challenge for the entire breast cancer team. The clinical, imaging and outcome observations indicate that diffusely infiltrating breast cancer represents a very unusual breast malignancy, regardless of whether it is E-cadherin negative or positive. All aspects of the diffusely infiltrating breast cancer suggest that it may have a site of origin different from all other breast cancers. We propose that it originates from the mesenchymal stem cells/progenitors through a complex process of epithelial-mesenchymal transformation and predominantly mesenchymal-epithelial transformation. Control of this unusual malignancy requires new approaches to earlier detection and entirely new therapeutic innovations.

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Detection and Diagnosis of Breast Diseases
Using the Multimodality Approach. An interactive course.

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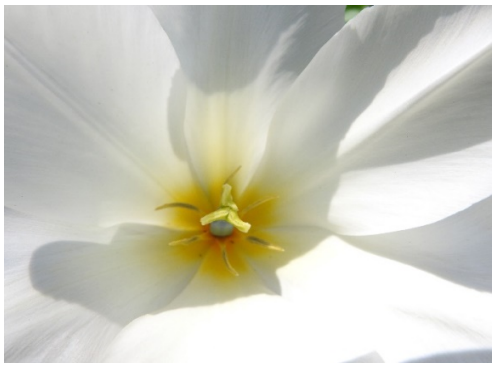
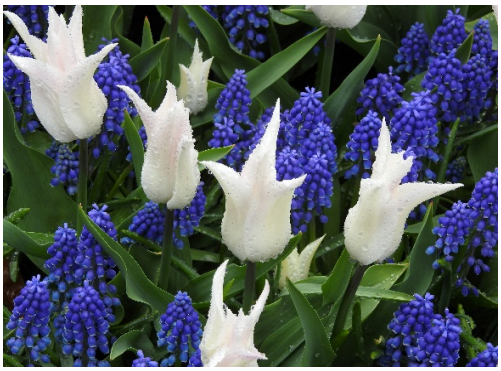
Course Director

The mission of the Tabar Foundation is to support research and education to fight against breast cancer. Dr. Tabar's own photographs are now available as high-quality prints. All proceeds from your tax-deductible purchase will support young physicians who are learning how to detect breast cancer when it is still curable. Visit: tabarfoundation.org

XIX