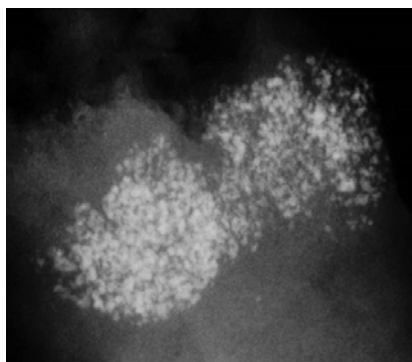


3D image of sclerosing adenosis



Mammogram of sclerosing adenosis



Mammography Education, Inc.



2023

BREAST SEMINAR SERIES

Docenti

LÁSZLÓ TABÁR, MD, FACR (Hon)

Direttore del Corso

Professore emerito di Radiologia

Analisi avanzata delle calcificazioni mammarie

**Webinar con parte interattiva dal vivo
alla fine del corso**

28 gennaio 2023

Traduzione

/ partecipazione alla discussione

**NUOVA
struttura
del corso**

Dr. Alfonso Frigerio

Dr. Giulia Picozzi

Progettato per:

**Radiologi • Chirurghi • Anatomo-Patologi
Ginecologi • Tecnici di Radiologia**

***Questo corso fornisce conoscenze estese e approfondite
sulla diagnostica per immagini e la diagnosi differenziale delle
malattie mammarie, le implicazioni per la terapia
e le tecniche diagnostiche più moderne***



2022

BREAST SEMINAR SERIES of MEI

Analisi Avanzata delle Calcificazioni Mammarie.
Corso tipo Webinar con parte interattiva dal vivo

László Tabár, MD, FACR (Hon)
Direttore del Corso

DOCENTI



László Tabár, MD, FACR (Hon).
Direttore del Corso

*Professore emerito di Radiologia
Università di Uppsala
Svezia*

Traduttori



Alfonso Frigerio, M.D.

*già Direttore dello Screening Mammografico
e del Centro di Riferimento Regionale
Torino, Italia*



Giulia Picozzi, MD.

Radiologa

*Rete Oncologica, Istituto Scientifico per la
Prevenzione e la Ricerca Oncologica -
ISPRO, Firenze, Italia*



2022

BREAST SEMINAR SERIES of MEI

Analisi Avanzata delle Calcificazioni Mammarie.
Corso tipo Webinar con parte interattiva dal vivo

László Tabár, MD, FACR (Hon)
Course Director

Mammography Education, Inc. is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. Mammography Education, Inc. designed these medical education activities for a maximum of **6 credit hours in Category I** of the Physicians' Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he / she actually spent in the educational activity.

CORSO DI NUOVA PROGETTAZIONE

Questo corso presenterà (1) un **nuovo sistema di classificazione** dei cancro mammari basato sulla loro sede di origine. (2) **Un'analisi approfondita delle calcificazioni mammarie** con approccio in multimodalità. Ogni caso sarà illustrato mostrando una macrosezione istologica sottile e spesso anche una spessa (3-D) per offrire la più accurata correlazione tra immagine diagnostica e istologia sottostante. (3) Queste nozioni condurranno a **diagnosi più accurate** e maggior sicurezza nella discussione multidisciplinare.

* **Nel webinar dal vivo del 28 gennaio, ci sarà spazio per domande e risposte immediate** alla fine di ogni caso. **Prima della parte dal vivo**, i partecipanti avranno accesso a **8 lezioni** del prof Tabar **sottotitolate in italiano** e focalizzate sull'analisi approfondita delle calcificazioni mammarie.

* L'accesso alle **prime 4 lezioni** sarà attivato il **9 gennaio** e i partecipanti avranno tempo fino al 15 gennaio per inviare le loro domande a alfonso.frigerio@gmail.com.

* L'accesso alle **altre 4 lezioni** sarà attivato il **16 gennaio** e i partecipanti avranno tempo fino al 22 gennaio per inviare le loro domande a alfonso.frigerio@gmail.com.

* **Nel webinar del 28 gennaio** il prof Tabar risponderà dal vivo, sia alle domande già inviate, sia a quelle fatte in diretta.

RINGRAZIAMENTI

Desideriamo ringraziare:

* Korilù srl di Bologna per l'organizzazione di questo webinar

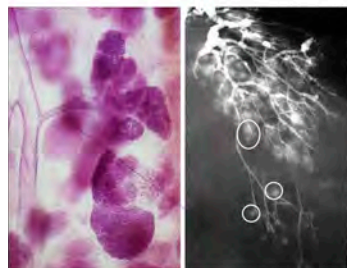
* Il Dr Alfonso Frigerio per il contributo alla progettazione del nuovo formato del corso



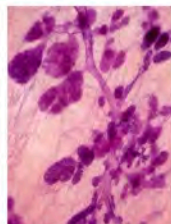
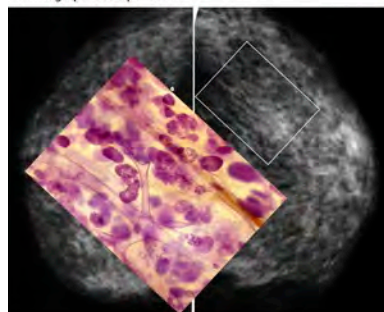
Fotografie della collezione della Tabar Foundation, fondazione non-profit dedicata alla Ricerca e alla Didattica sul carcinoma mammario. Visitate: tabarfoundation.org

MAMMOGRAPHIC-3D HISTOLOGIC CORRELATION OF THE NORMAL BREAST STRUCTURE

NORMAL BREAST ANATOMY

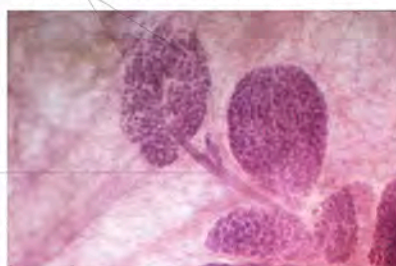


TDLUs on 3D histology and on a galactogram. Terminal duct
Illustration of subgross breast anatomy using 3D histologic-mammographic comparison.

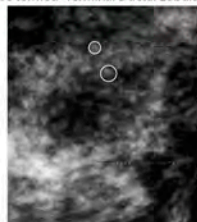


Three of the four basic building blocks (TDLU, ducts and fibrous tissue) are discernable on this 3D histology slice.

A lobule consists of 40-60 ductules / acini. This is the site of milk production and also 75% of breast cancers originate from the cells lining the acini (AAB, acinar adenocarcinoma of the breast).

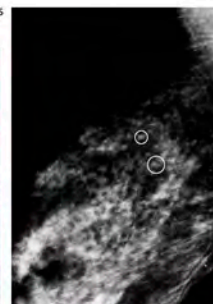


Large format thick section (subgross, 3D) histology image of neighboring TDLUs. The lobule and the terminal duct combined are termed "Terminal Ductal Lobular Unit (TDLU)".

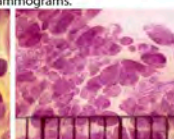
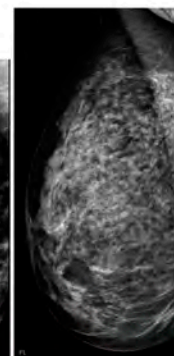


TDLUs

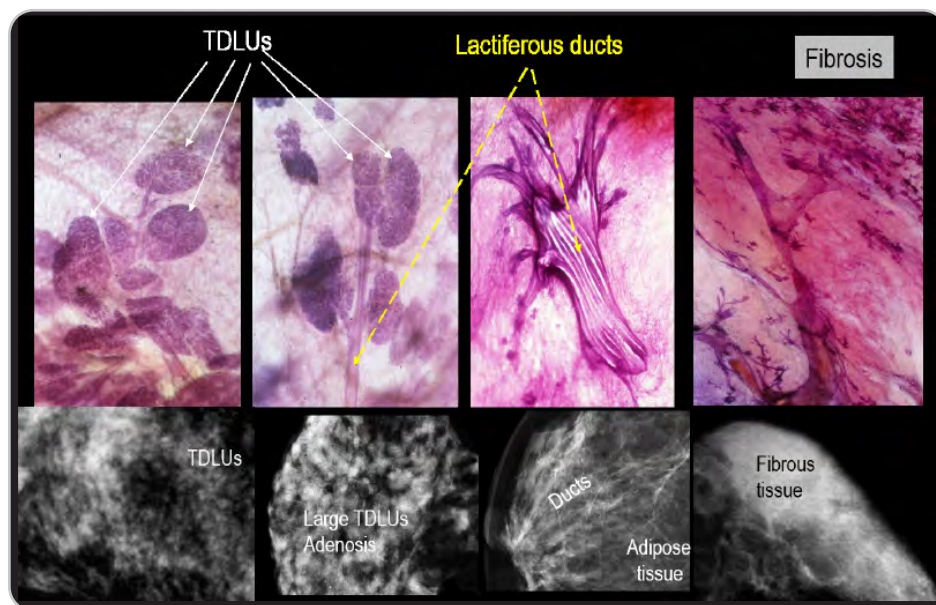
Milk ducts



Three of the four basic building blocks (TDLU, ducts and adipose tissue) are discernable on these mammograms.



The size of a normal TDLU varies between 0.7 - 1.5 mm.



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



2022

BREAST SEMINAR SERIES of MEI

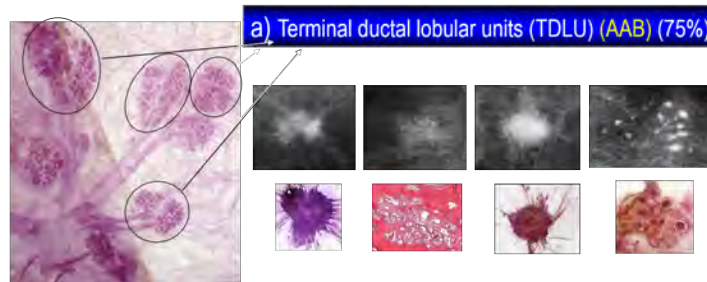
Analisi Avanzata delle Calcificazioni Mammarie.
Corso tipo Webinar con parte interattiva dal vivo

László Tabár, MD, FACR (Hon)
Course Director

CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

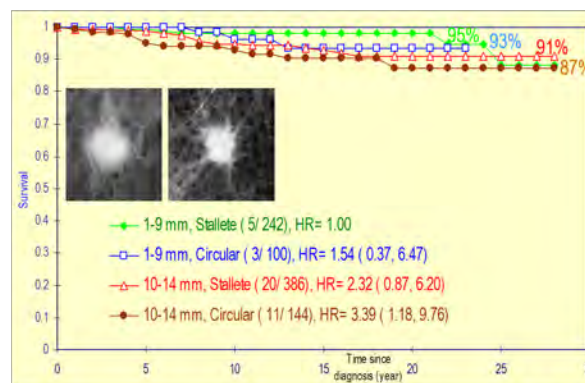
Malignant type calcifications (CIS AAB) stellate and circular/oval-shaped lesions (invasive AAB) originating from the TDLUs (Acinar Adenocarcinoma of the Breast, AAB): clinical presentation, histology, mammographic - MRI - ultrasound appearance and outcome.

We use a classification system which is based on the apparent **anatomic site of origin** of breast cancer since the **long-term patient outcome** appears to be largely determined by the site of origin of breast cancer.



The third generation prognostic features (imaging biomarkers) of Acinar Adenocarcinoma of the Breast (AAB)

Cumulative survival of **circular/oval** and **stellate** breast cancer cases with no associated calcifications on the mammogram. Women 40-69 yrs old, diagnosed in Dalarna county, Sweden between 1977-2006



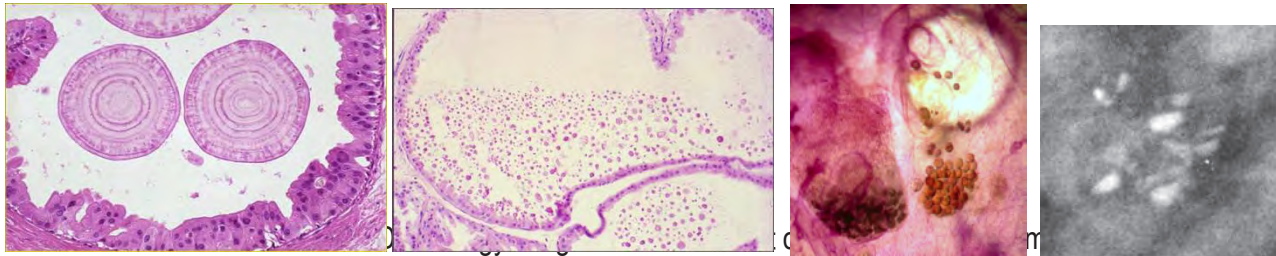
Long-term survival of women with 1-14 mm AAB

HYPERPLASTIC BREAST CHANGES ORIGINATING IN THE TDLU

ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

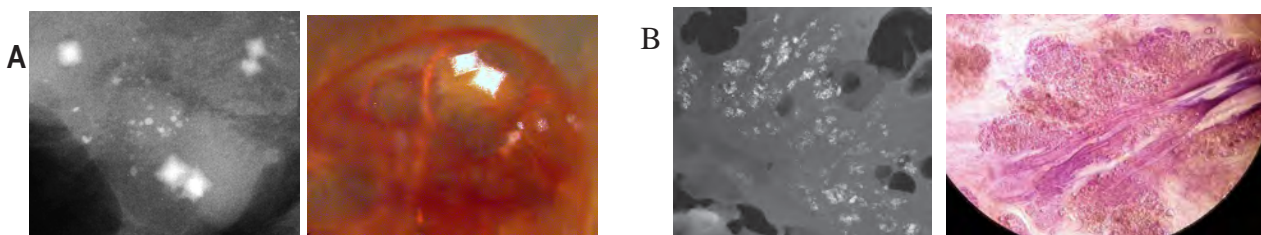
Benign breast diseases originating in the TDLU and associated with calcification on the mammogram

- **Fibrocystic change. Fibroadenoma. Different types of adenosis.** Understanding pathophysiology leading to calcified and non-calcified hyperplastic breast change

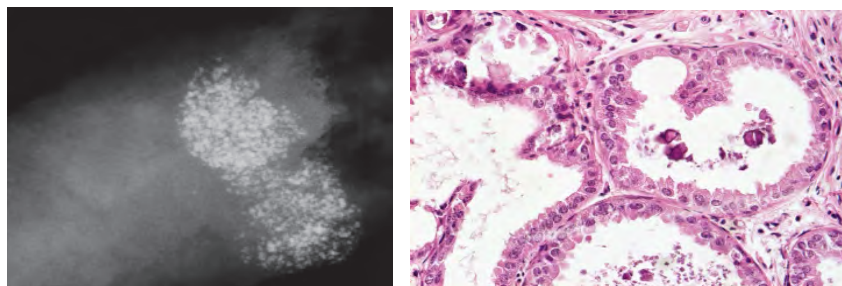


body-like calcifications, seen as teacup-like calcifications on the mammogram

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



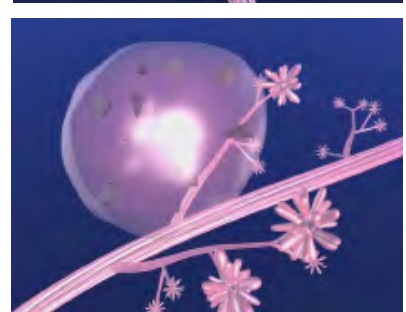
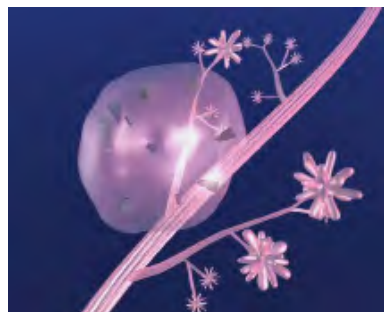
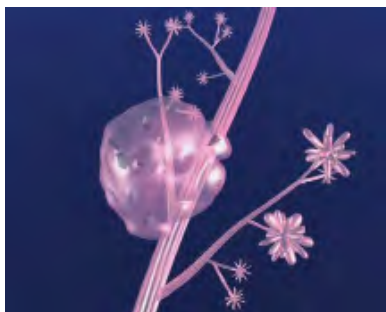
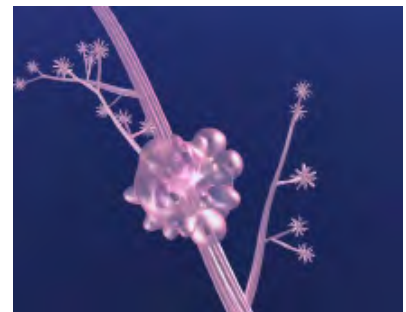
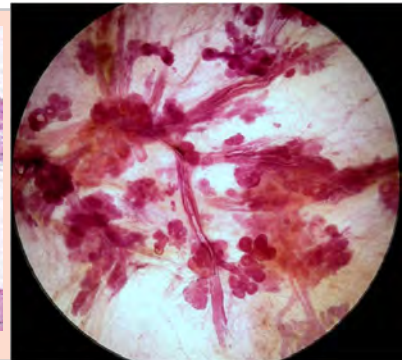
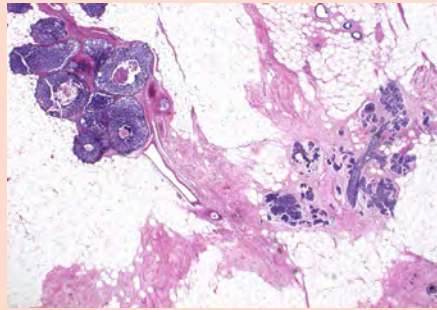
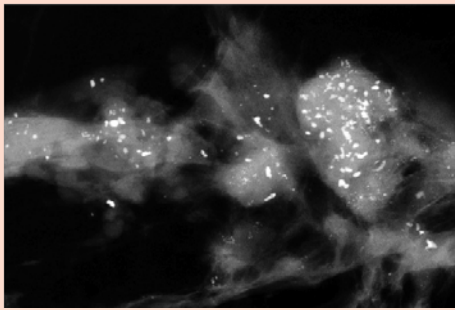
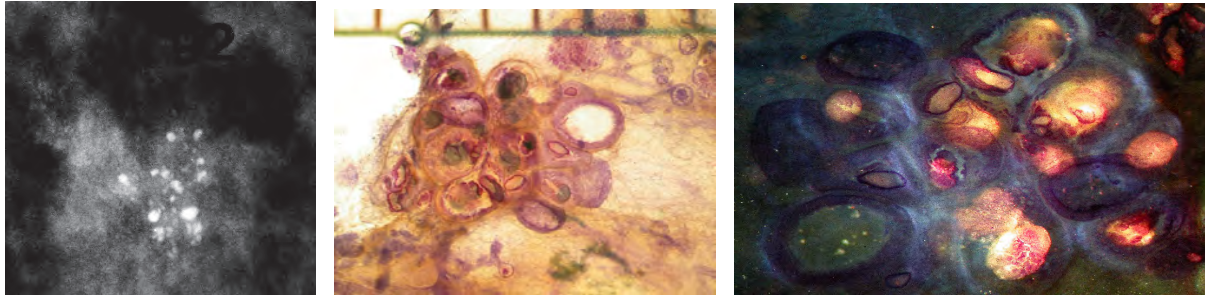
The morphologic analysis of calcifications representing a less aggressive carcinoma:
Grade 1 / well differentiated CIS



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

BREAST CANCERS ORIGINATING IN THE TDLU

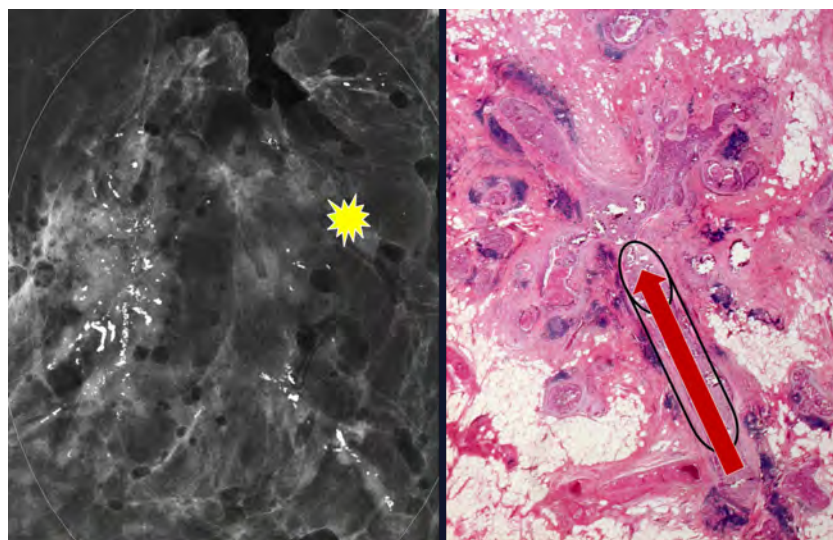
Mammographic / histopathologic correlation of pleomorphic calcifications representing Gr 2 CIS within the TDLU



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 calcification**.

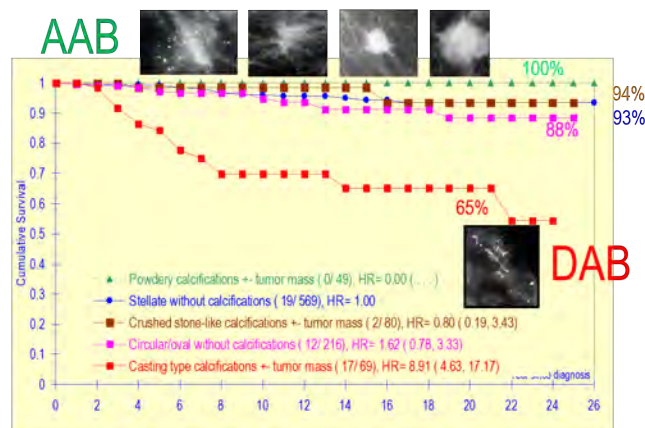
1:00 End of the course

Diffuse breast cancer originating from the ma or lactiferous ducts (DAB) (**duct forming invasive carcinoma, not DCIS**)



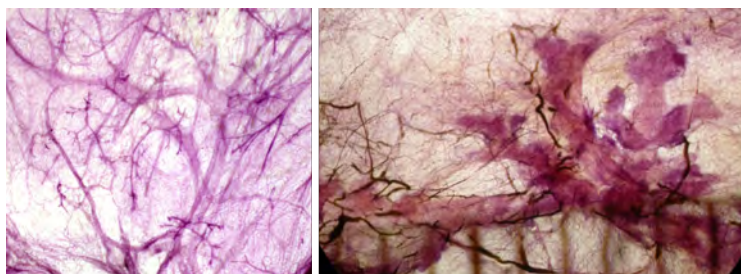
Mammographic-histologic correlation: 60x30 mm Gr 3 duct forming invasive cancer (DAB) and a 6x3 mm poorly differentiated AAB.

Cumulative survival of women aged 40-69 years with 1-14 mm invasive breast cancers by mammographic tumor features. Dalarna county, Sweden.



Long-term survival of women with 1-14 mm AAB without and with associated DAB

Normal,
atrophic ducts



Neoductogenesis
and
angioneogenesis

Diffuse breast cancer originating from the major ducts (DAB) (duct forming invasive carcinoma, not DCIS)

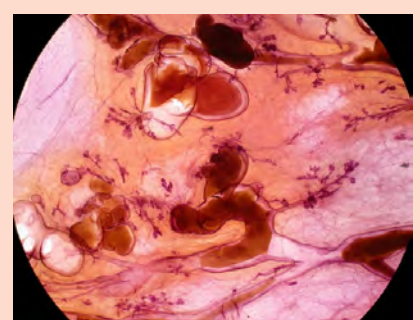
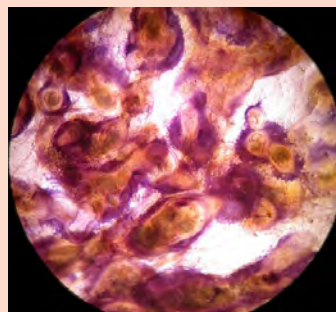
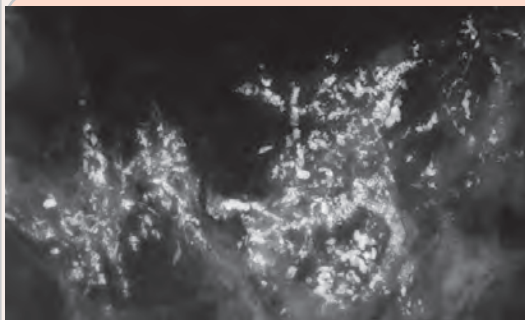
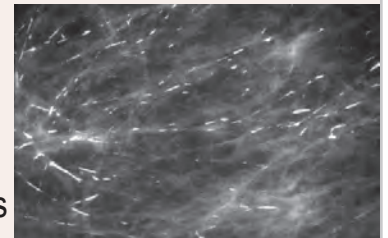
ALGORITHM FOR CLASSIFYING BREAST DISEASES ACCORDING TO THEIR SITE OF ORIGIN

Breast diseases originating in the major ducts

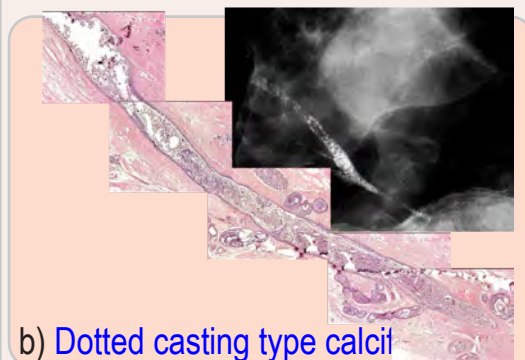
Benign type calcifications originating in the major ducts

a) Secretory disease type calcification

Malignant type calcification originating in the major ducts



a) **Fragmented casting type calcifications**



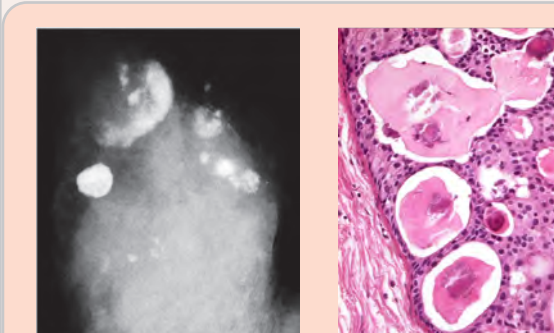
b) **Dotted casting type calcifications**

* **Four different malignant type calcifications** developing in the major ducts: **a)** fragmented casting type **b)** dotted casting type **c)** slipping stone-like **d)** pearl necklace-like.

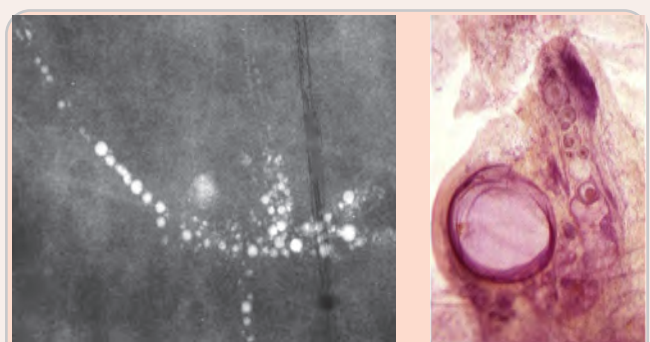
* The concept of **neoductogenesis**. Long-term follow-up results. New aspects, correct terminology.

* 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.

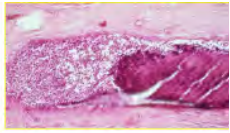
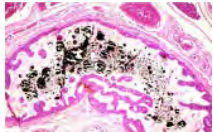
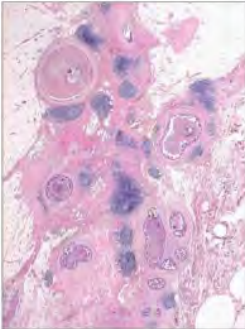
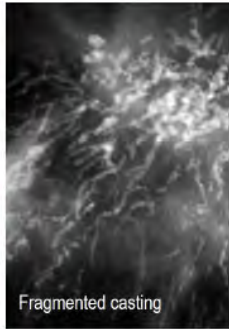
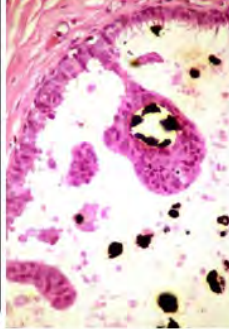



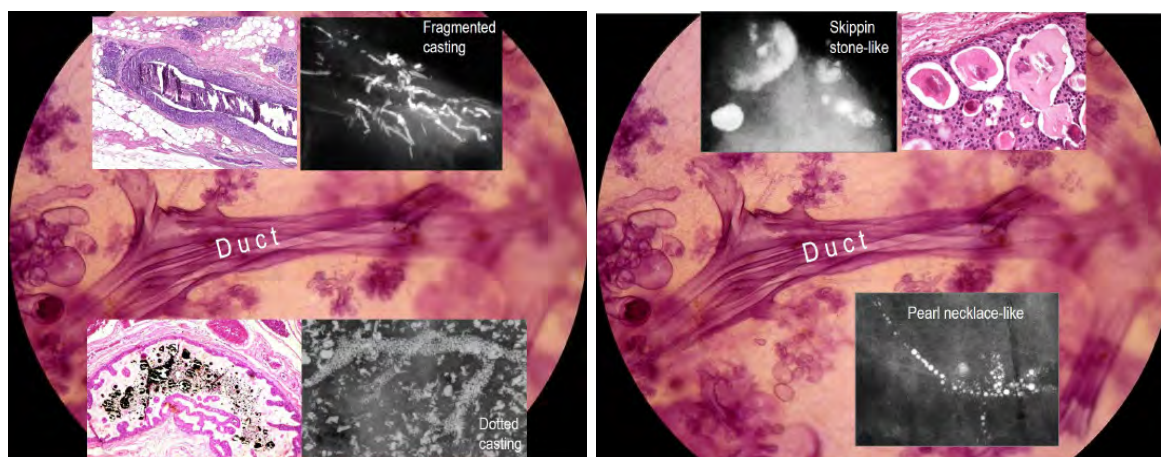
c) **Slipping stone-like calcification**

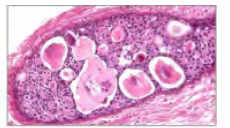
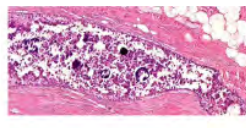
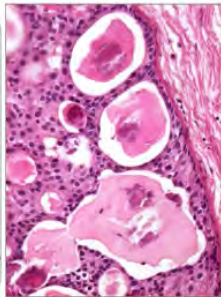
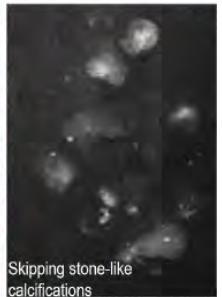

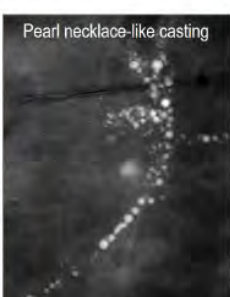


d) **Pearl necklace-like calcification**

Diffuse breast cancer originating from the ma or lactiferous ducts (DAB) (duct forming invasive carcinoma, not DCIS)

<p>MALIGNANT: Necrosis, no fluid</p> <p>Ca++ in necrosis</p>	<p>Ductal Origin Ca++ on the mammogram</p>		<p>MALIGNANT: Necrosis, no fluid</p> <p>Ca++ in necrosis</p>	<p>Ductal Origin Ca++ on the mammogram</p>	
<p>Type 1 FRAGMENTED CASTING (solid bars)</p> <p>Diffuse, lobar disease</p> <p>Grade III solid cell proliferation</p>			<p>Type 2 DOTTED CASTING-TYPE (snakeskin-like)</p> <p>-Diffuse, lobar disease</p> <p>- Grade III</p> <p>-micropapillary cell proliferation</p>		



<p>MALIGNANT: No necrosis, fluid</p> <p>Ca++ in proteinaceous fluid</p>	<p>Ductal Origin Ca++ on the mammogram</p>		<p>MALIGNANT: No necrosis, fluid</p> <p>Ca++ in proteinaceous fluid</p>	<p>Ductal Origin Ca++ on the mammogram</p>	
<p>Type 3 "DISCOID" (skipping stone-like)</p> <p>-Diffuse lobar disease</p> <p>-Grade II</p> <p>-Micropapillary or/and cribriform</p>			<p>Type 4 "PEARL NECKLACE"</p> <p>-large psammoma body-like calcifications within ducts</p> <p>-Grade I or/and 2</p> <p>- Micropapillary, cribriform.</p>		

Discussione Webinar dal vivo 28 gennaio 2023, 9:00-13:00, con Dr Laszlo Tabar, Dr Giulia Picozzi, Dr Alfonso Frigerio.



2022

BREAST SEMINAR SERIES of MEI

Analisi Avanzata delle Calcificazioni Mammarie.
Corso tipo Webinar con parte interattiva dal vivo

László Tabár, MD, FACR (Hon)
Course Director

**Per ulteriori informazioni e per l'iscrizione
i partecipanti italiani possono contattare:**

Korilù srl, Via Belmeloro 5 40126 Bologna

Tel (0039) 051 385328 - 051 387615

E-mail: congressi@korilu.it

Per ulteriori informazioni e per l'iscrizione si prega di contattare:

Mammography Education, Inc. 4429 E. Spur Drive

CAVE CREEK, AZ 85331, USA

Tel: (001) 480 419 0227 Fax: (001) 480 419 0219

THE SCHEDULE IS SUBJECT TO CHANGE WITHOUT NOTICE AND DOES NOT REPRESENT A COMMITMENT ON THE PART OF M.E.I.
ALL RIGHTS RESERVED INCLUDING THE RIGHT OF REPRODUCTION IN WHOLE OR IN PART OF ANY FORM

VISIT US ON THE INTERNET: [HTTP://WWW.MAMMOGRAPHYED.COM](http://www.mammographyed.com) COPYRIGHT ©



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