



Global Breast Cancer Conference

**GBCC**  
**2017**

April 20 (Thu) - 22 (Sat), 2017  
The Shilla Jeju Hotel, Jeju Island, Korea

## **Co-existence of Ductal carcinoma within Phyllodes tumor**

A review of 557 patients with phyllodes tumor from  
a twenty-year region-wide database in Hong Kong and Shenzhen, China

**Michael Co, FRCSEd**

Clinical Assistant Professor, Hon. Associate Consultant

Division of Breast Surgery, Department of Surgery

The University of Hong Kong

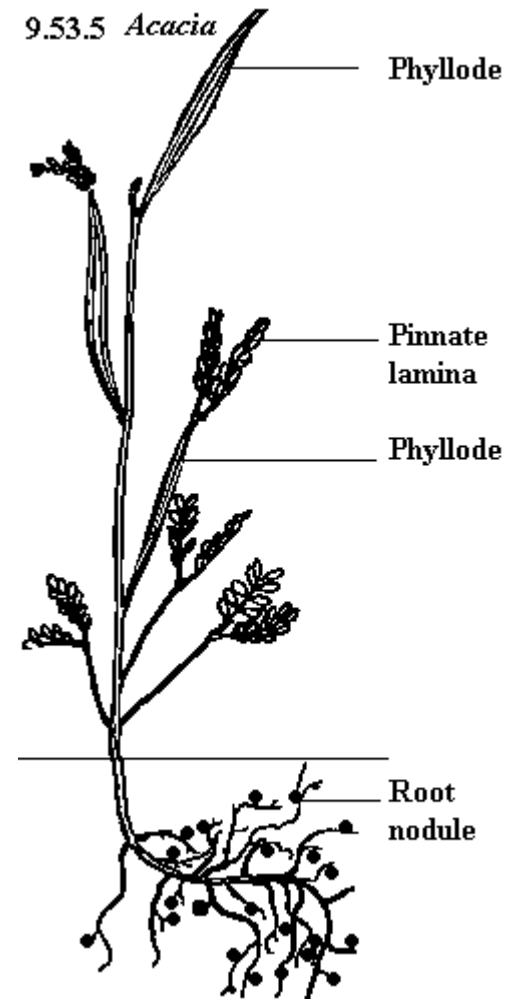


香 港 大 學

THE UNIVERSITY OF HONG KONG

# Introduction

- Phyllodes tumor (PT) is uncommon
- Well-circumscribed breast lesion
  - Double-layered epithelial component
  - Overgrowth of mesenchymal component
  - Leaf-like structures
    - Phyllodes = “leaf-like” in Latin



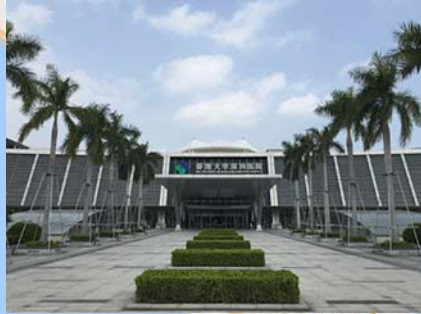
- PT is uncommon
  - 1% of all breast neoplasms
- PT is classified into benign, borderline and malignant
  - Stromal hypercellularity
  - Cellular pleomorphism
  - Mitotic activity
  - Nature of the margins
  - Stromal pattern
- Malignant transformation of PT usually occurs in the stromal component
- Coexisting carcinoma arising from the epithelial component is very rare

	<b>Author</b>	<b>Year</b>	<b>Age</b>	<b>Surgery type</b>	<b>Axillary surgery</b>	<b>Phyllodes type</b>	<b>Phyllodes Size (cm)</b>	<b>Carcinoma type</b>	<b>Carcinoma size</b>	<b>Ref</b>
1	Seemayer et al	1975	27	MX	N	Malignant	6.0	DCIS	Focal	1
2	Leong et al	1980	49	WLE	N	Benign	6.0	LCIS	-	2
3	Cole-Beuglet et al	1983	55	WLE	N	Benign	3.5	DCIS LCIS	-	3
4	Grove et al	1986	71	MX	Y	Benign	19.0	DCIS	2	4
5	Ward et al	1986	55	MX	N	Benign	4.0	LCIS	Focal	5
6	Knudsen et al	1987	71	MX	Y	Benign	7.0	DCISLCIS	Multi-focal	6
7	De Rosa et al	1989	77	MX	Y	Benign	5.0	DCIS	0.3	7
8	Schwickerath et al	1992	47	MX	Y	Malignant	2.0	DCIS	-	8
9	Padmanabhan et al	1997	47	MX	Y	Malignant	7.5	LCIS	Focal	9
10	Naresh	1997	51	WLE	N	Borderline	14.0	DCIS	Focal	10
11	Nishimura et al	1998	80	Lo	N	Malignant	10.5	DCIS	-	11
12	Alo et al	2001	39	WLE	N	Malignant	9.0	DCIS	-	12
13	Lim et al	2005	45	MX	N	Malignant	12.0	DCIS	0.6	13
14	Nomura et al	2006	75	MX	N	Malignant	3.5	DCIS	-	14
15	Yamaguchi et al	2008	54	MX	N	Benign	15.0	DCIS	Focal	15
16	Yoshinori et al	2011	53	WLE	N	Benign	3.5	DCIS	0.5	16
17	Shin et al	2013	45	WLE	N	Benign	1.8	DCIS	1.2	17

# Methods

- Retrospective review on a prospectively maintained PT database
  - **Hong Kong** (January 1997 – February 2016)
    - Queen Mary Hospital (QMH) / Tung Wah Hospital (Affiliated)
    - Kwong Wah Hospital (KWH)
    - Tuen Mun Hospital (TMH)
    - North District Hospital (NDH)
  - **Shenzhen, China** (July 2012 – February 2016)
    - The University of Hong Kong Shenzhen Hospital (HKUSZH)  
*(HKUSZH was established in 2012)*

SZX/ZGSZ



Zhujiang River Estuary 珠江口

HKG/VHHH

트레자오 섬 赤蠟角

TUNG CHUNG 東涌

란터우 섬 大嶼山

라마 섬 南丫島

Po Toi

# Results

- 557 PT patients
  - 480 from Hong Kong
  - 77 from Shenzhen
- Benign PT: 363 (65.2%)
- Borderline PT: 130 (23.3%)
- Malignant PT: 64 (11.5%)
- 6 (1.1%) patients had invasive or in-situ ductal carcinomas arising within the PT

## The 6 patients with ductal carcinoma within PT

- Median age: 48 years old (Range 25 – 54)
- 2 benign, 1 borderline, 3 malignant PT

#	Age	PT Size (cm)	DCIS Size (cm)	PT Type	PT Grade	DCIS Grade	ER Status	HER2 Status	OT	Margin	Survival (As in Nov 2016)
1	54	9'	Small focus	Borderline	8/10 HPF	Low	+	-	MX	Clear	Yes
2	52	10	Small focus	Malignant	15/10 HPF	Intermediate	N/A	N/A	MX	Clear	Yes
3	48	5	Small focus	Malignant	15/10 HPF	High	N/A	N/A	MX	Clear	Yes
4	44	5	Small focus	Benign	2/10 HPF	Low	+	-	MX	Clear	Yes
5	25	2.5	Multi-focal	Benign	1/10 HPF	Low	+	N/A	WLE	Clear	Yes
6	45	4	Small focus	Malignant	-	N/A (IDC)	-	-	MX	Clear	Yes

HK

CN



## Association of nature of PT and presence of ductal carcinoma

- 493 patients with benign or borderline PT
  - 3 (0.6%) had occult ductal carcinoma
- 64 patients with malignant PT
  - 3 (4.7%) had occult ductal carcinoma

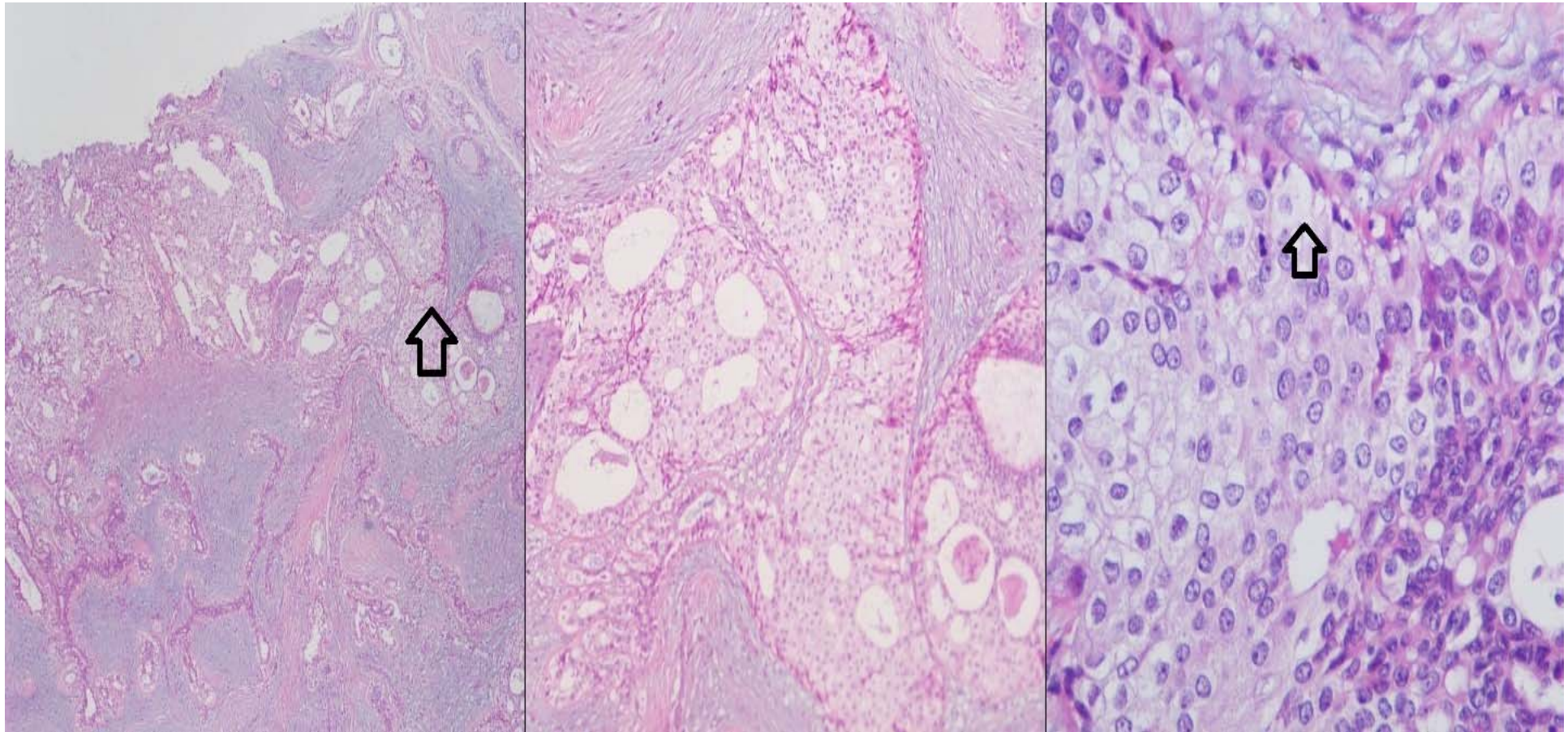
*Fisher's exact test,  $P = 0.02$*

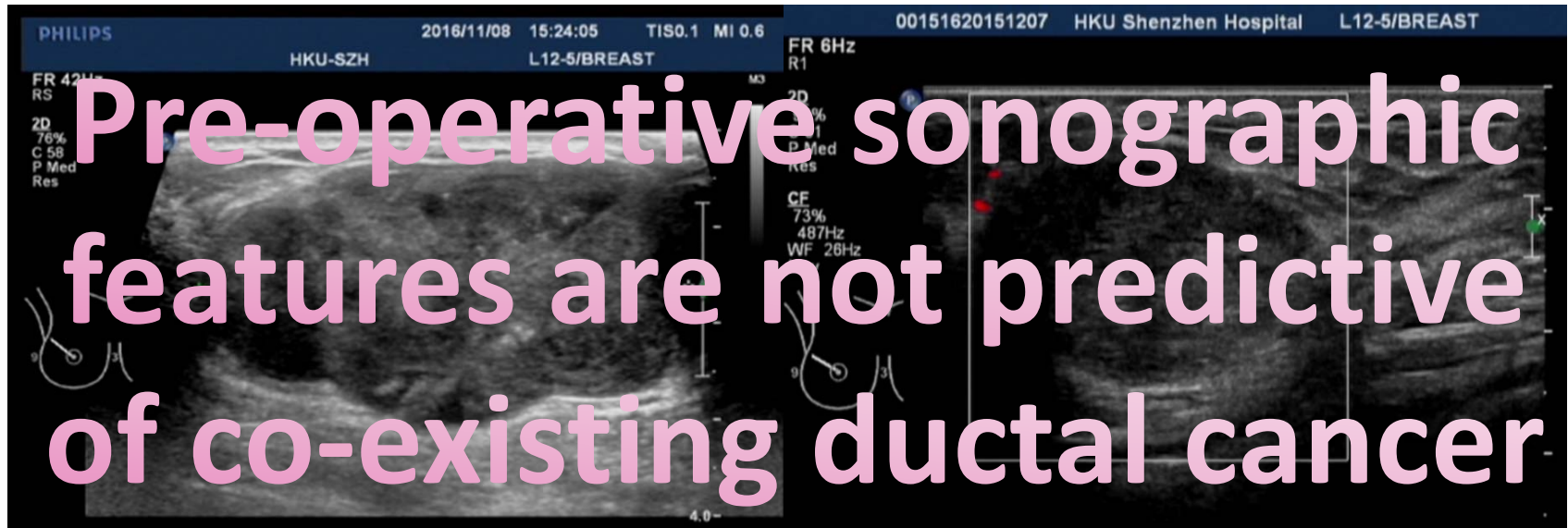
## Association of DCIS grade with nature of PT

- Concerning the grade of co-existing DCIS
  - The 3 low grade lesions co-exist with benign / borderline PT
  - 1 intermediate grade 1 high grade DCIS co-exist with malignant PT

*Fisher's exact test,  $P = 0.1$*

Multiple foci of ductal carcinoma in situ (DCIS) in a benign phyllodes tumor in  
(H&E x 40, H&E x 200, H&E x 400)





#	Age	Size (cm)	Sonographic features: Border	Sonographic features: Echogenicity	Microcalcifications	BIRADS	Nature of PT
1	54	9	Well circumscribed	Hypoechoic	No	4	Borderline
2	52	10	Well circumscribed	Hypoechoic	No	4	Malignant
3	48	5	Slightly irregular	Hypoechoic	No	4	Malignant
4	44	5	Well circumscribed	Hypoechoic	No	4	Benign
5	25	2.5	Well circumscribed	Hypoechoic	No	3	Benign
6	45	4.8	Well circumscribed Lobulated borders	Hypoechoic	Suspicious microcalcifications	4	Malignant

# Conclusions

- Co-existence of ductal carcinoma and PT is uncommon, but **NOT rare**
  - Underestimated
  - Under-diagnosed
  - Under-reported
- Pre-operative breast imagings are **NOT predictive**
- Malignant PT is associated occult ductal carcinoma
  - Postulations
    - Epithelial component might have been stimulated by hormones and systemic growth factors by PT <sup>1</sup>
    - Carcinoma formation has been induced by the stromal component of the PT by its effect on epithelium <sup>2</sup>
- **Meticulous examination of specimen is vital**

1. Dong Jae Shin et al. Ductal Carcinoma In Situ Arising in a Benign Phyllodes Tumor J Korean Soc Radiol 2013;68(5):423-426

2. Deodhar KK et al. Cancerization of phyllodes tumour. Histopathology 1997;30:98-99

# Acknowledgements

## **Dr. Ava Kwong (and the team)**

Chief of Division of Breast Surgery, The University of Hong Kong

## **Dr. Gary Tse**

SMO, Department of Anatomical and Molecular Pathology, The Chinese University of Hong Kong

## **Dr. Chi Sing Ng**

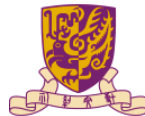
Consultant, Department of Pathology, The University of Hong Kong Shenzhen Hospital

## **Dr. Jiannan Wei**

Resident Specialist, Department of Surgery, The University of Hong Kong Shenzhen Hospital



香港大學  
THE UNIVERSITY OF HONG KONG



香港中文大學  
The Chinese University of Hong Kong



香港大学深圳医院  
The University of Hong Kong - Shenzhen Hospital

# THANK YOU



Correspondence:  
Dr. Ava Kwong (avakwong@hku.hk)