



**1st International Congress of Breast Disease Centers.  
Malesherbes Convention Center, Paris. 28-29 January 2011**

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# **BREAST CANCER DIAGNOSIS IN ONE DAY: THE IGR EXPERIENCE**

**Philippe Vielh MD, PhD  
Breast cancer study group  
Institut de Cancérologie Gustave Roussy  
Villejuif, France**



# **WHY: CONTEXT IN 2004**

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- **French breast cancer screening program launched and efficient, BUT :**
  - **Post-screening care : not organized**
  - **Surgical delays : twice as expected and recommended (3 months instead of 1 month)**
- **Evolution of breast care towards non palpable lesions: importance of a close collaboration between clinicians radiologists and (cyto)pathologists**

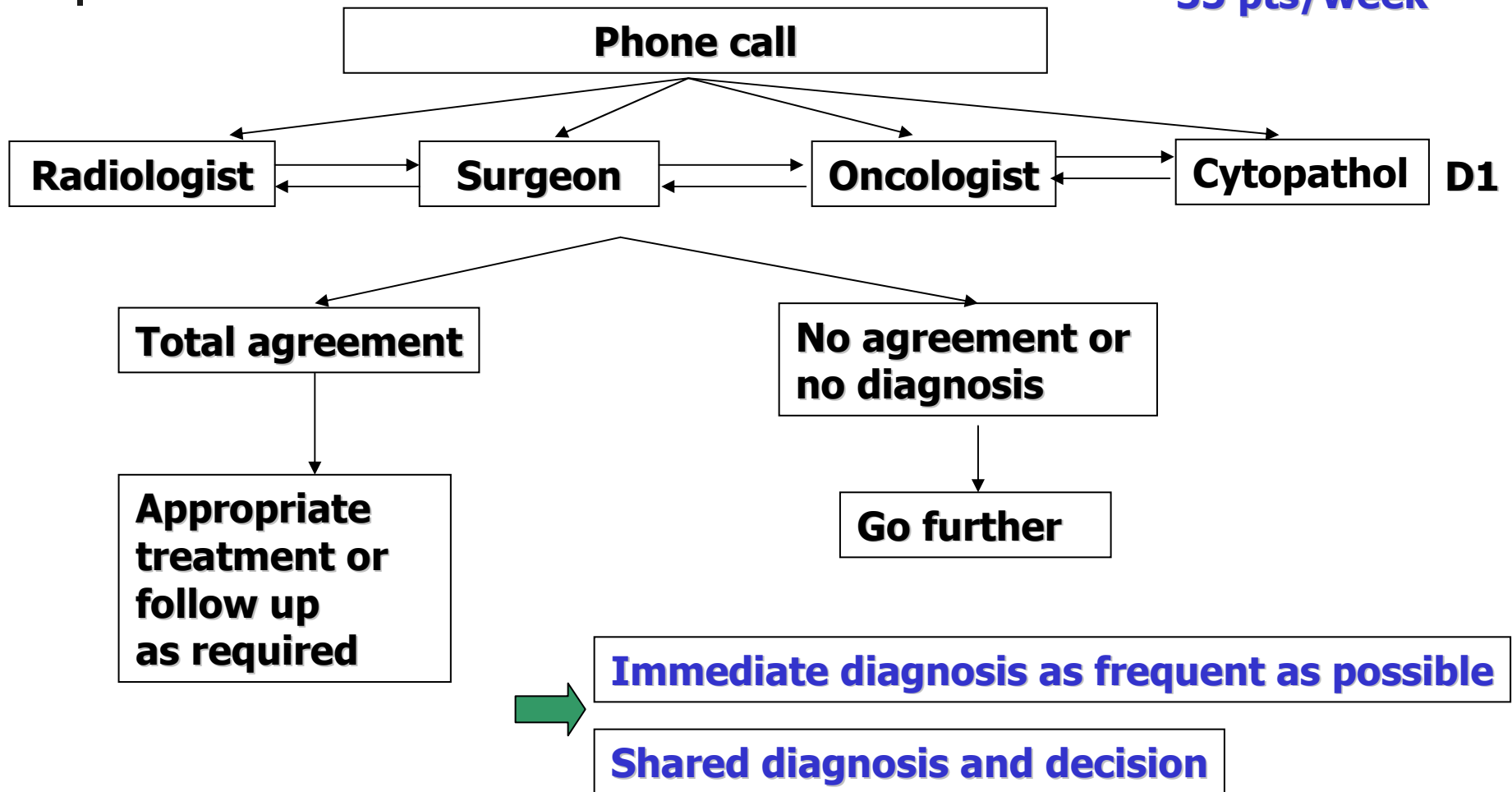


# **French and European recommendations**

- **Preoperative diagnosis of breast lesions mandatory**
- **Delay between first screening test and surgery  $\leq 1$  month for cancers**
- **Preoperative multidisciplinary assessment mandatory in many cases**
- **Postoperative multidisciplinary assessment mandatory**

# HOW: ORGANISATION

35 pts/week



# Phone call

**direct patients to the most appropriate medical visit**

**Information sheet sent to the patient**



## L'équipe de Pathologie Mammaire

### Médecins Oncologues



Dr Fabrice ANDRE Dr Abdelkader BERNOU Dr Suzette DELALOGUE Dr Hugo MARSIGLIA Dr Mahasti SAGHATCHIAN Dr Marc SPIELMANN

### Chirurgiens



Dr Andréa CAVALCANTI Dr Virginie FOURCHOTTE Dr Jean-Rémy GARBAY Dr France ROCHARD Dr Anne THOURY

### Radiologues



Dr Corinne BALLEYGUIER Dr Alexandra ATHANASIOU

### Cytologistes



Dr Marie-Christine MATHIEU Dr PHILIPPE VIELH

### Psychologues



Diane BOINON Nicole LANDRY-DATTÉE

### Accueil



Colette GARCIA Danielle OSTROWSKI Nathalie GRANDJEAN

### Assistantes médicales



Danièle CLÉMANDOT Sandrine DASCIER Yéronica FÔRTE Marié-Ange LÓPEZ Audrey PEYCLIET

### Cadre Infirmier



Nathalie RAVINET Cécile TABLEAU Marlène THIRIOT Marie-Paule ETCHEVERY

### Infirmières et Aïdes-Soignantes



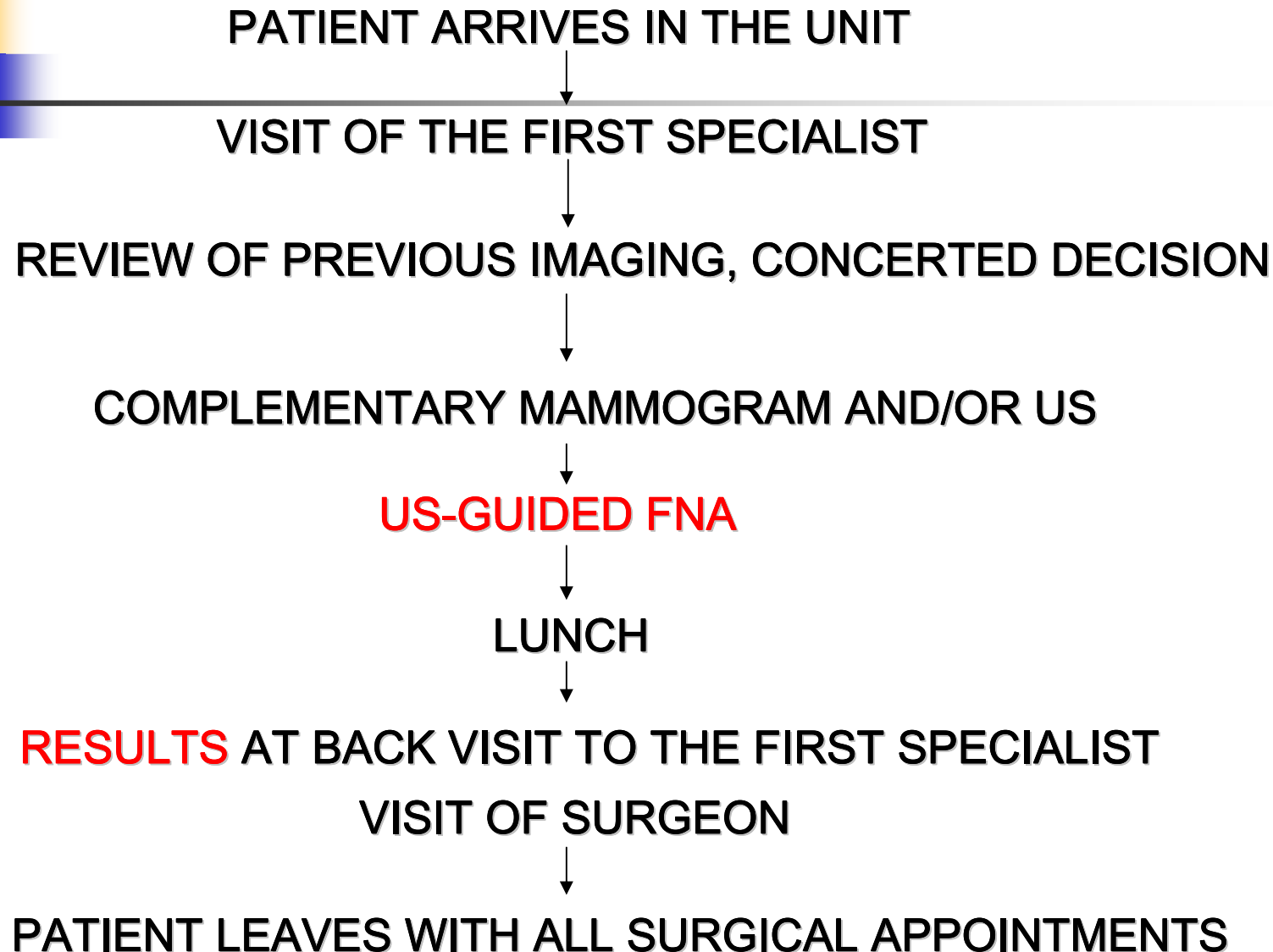
Pascale AUGUSTE Ana BOURON Anna Maria SIMOES Marie-Claire SOULIER Florette ZITA

### Bénévoles



Pierrette FAURE Marie-Françoise VOISIN Yvette FALGON

# Itinerary 1 : subclinical nodule



## Itinerary 2 : large mass

PATIENT ARRIVES IN THE UNIT

VISIT OF FIRST SPECIALIST

**FNA + NEEDLE CORE BIOPSY** + FROZEN SAMPLE

BLOOD TESTS, FIRST EXTENSION ASSESSMENTS

LUNCH

**RESULTS** AT BACK VISIT TO THE ONCOLOGIST

PATIENT LEAVES WITH APPOINTMENTS FOR MEDICAL  
ONCOLOGIST VISIT AND CHEMOTHERAPY



# Itinerary 3 : microcalcifications



PATIENT ARRIVES IN THE UNIT



VISIT OF FIRST SPECIALIST

*Explanations on breast lesions, diagnostic procedure  
and potential diagnostics and implications*



REVIEW OF PREVIOUS IMAGING  
*CONCERTED DECISION*



STEREOTACTIC MACROBIOPSY



PATIENT LEAVES WITH MEDICAL  
AND SURGICAL APPOINTMENTS



# **CLINICAL RESULTS**

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- **Quantitative data**
- **Qualitative data**
- **Patient's satisfaction data**

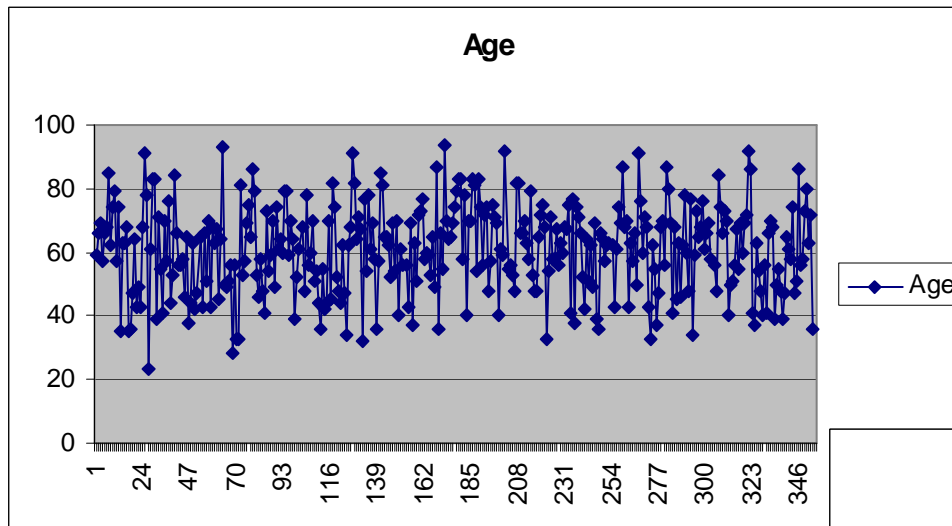


# Numbers

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- **> 6000 women seen at the one stop unit**
- **Median delay between first phone call and first visit: 11 days**
- **Cancer rate at one stop unit: > 65%**
- **20% calcifications, 70% solid masses**
- **US-guided FNA: 60% initially, > 80% currently**

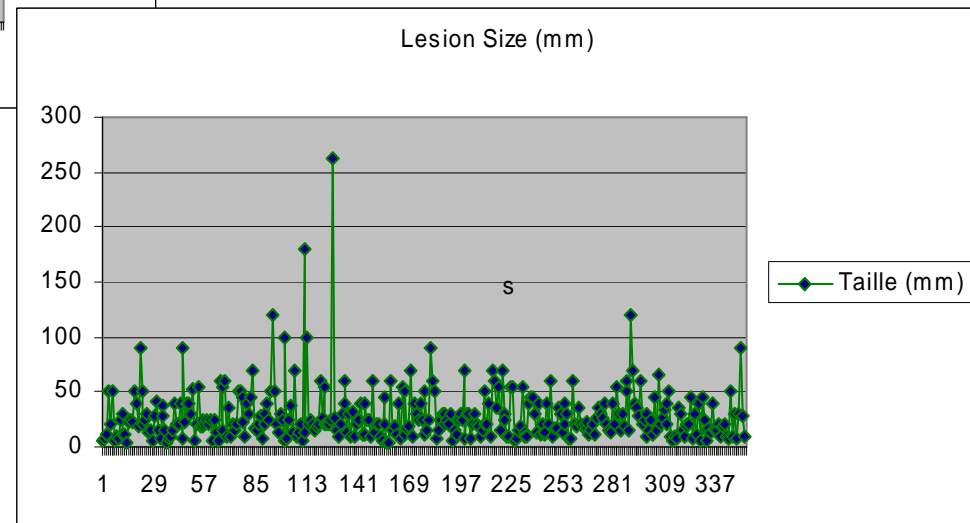
# FNA for solid masses



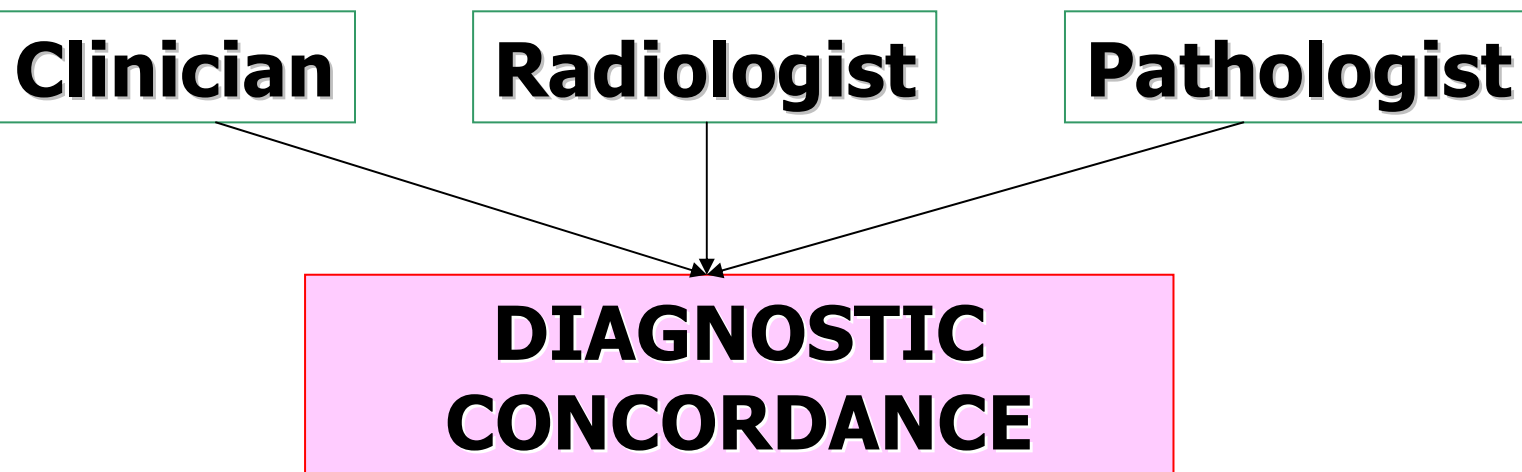
**Several successive evaluations**

**Median age: 56 yrs**

**Median lesion size: 15 mm**

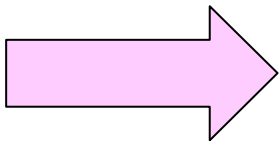


# Perfect concordance is mandatory



**Multidisciplinarity +++**

**A single discordant element: go further +++**





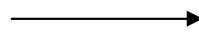
# FNA: results

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(As a mean on several successive evaluations)

**Unsatisfactory specimens : 2%**

**Suspect : 8%**



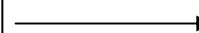
**Cancer : 80%**

**Cancer : 55%**



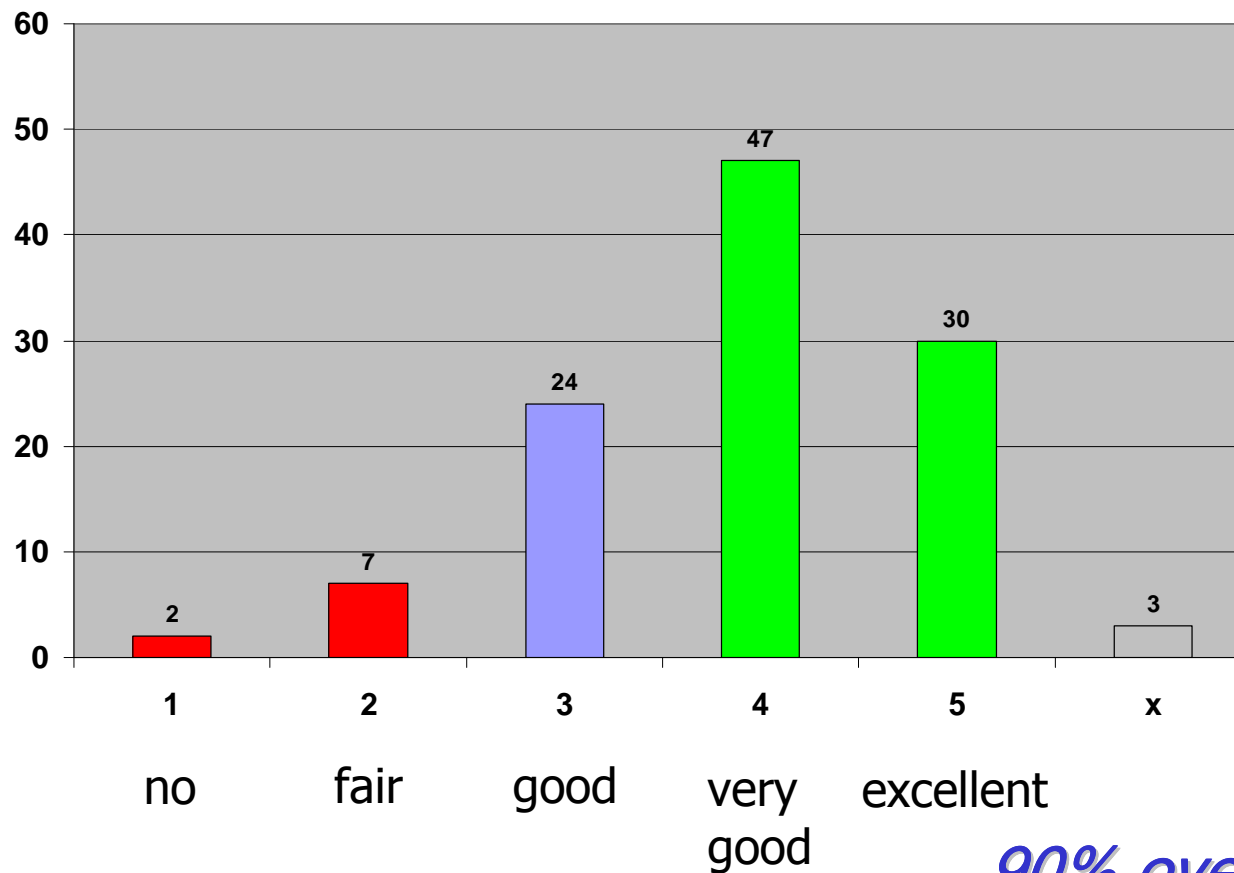
**Fx positive: 0.1%**

**Benign : 35%**



**Fx negative : 3%**

# Patient's satisfaction



*90% overall satisfied*



# Clinical results

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- Mean delay phone call-first visit : **11 days**
- If FNA is unsatisfactory, suspicious or discordant :  
can be repeated immediately and/or on site core  
needle biopsy performed)
- Regarding solid lesions, **exact diagnosis can be  
made in one day in 87% of cases**, and so the  
treatment plan and appointments given to patient
- For calcifications, diagnosis is obtained and given  
to patient after a maximum of **12 days**



- **Systematic review** of images by radiologist: multifocality evidenced in some cases
- **Multifocality**: proved the same day (mastectomy indicated)
- **Initiation of general work-up**
- **Multidisciplinary approach**
- **Screening for inclusion in clinical trials**
- **Banking** of a vast majority of samples with patients written informed consent (leftovers): translational research +++



# **Needs, requirements, and potential problems**

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- **Need well-trained senior physicians**
- **Sophisticated organisation**
- **Trust in the other doctors of the team**
- **Modesty and team spirit mandatory**
- **Permanent quality control necessary**
- **Diagnostic sometimes given too quickly?**



# RESEARCH ASPECTS

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- **Imaging: contrast doppler, angio-mammography, tomosynthesis, optic imaging**
- **Psychocognitive**
- **Health economics**
- **Translational research**



## Measure of direct costs

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<b>Overall measured costs (all included)</b>		
	<b>Median</b>	<b>Min-Max</b>
<b>FNA for palpable lesion</b>	<b>11 €</b>	<b>7.5 - 21.17 €</b>
<b>US-guided FNA</b>	<b>27 €</b>	<b>18.75 - 45.30 €</b>
<b>US-guided core needle biopsy</b>	<b>185 €</b>	<b>157.11 - 237.91 €</b>

**Overall cost for the 697 lesions (670 patients)  
for an exact diagnosis (including biopsies  
and surgeries where necessary): 56.463 €**

***Overall cost if 697 biopsies had been used (with  
no false positive or false negative result):  
123.950 €***



# **Translational research**

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- **Is FNAC an adequate material for molecular tests?**
- **Development of prognostic, predictive and diagnostic biomarkers**



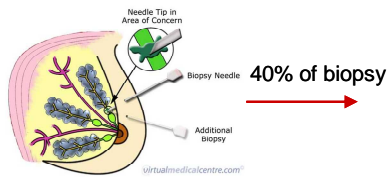
# **Diagnostic biomarkers using splicing array**

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- **Many exons are differentially expressed by breast cancer and benign lesions**
- **These alternative transcripts are detectable on material obtained by FNA and may contribute to increase sensitivity and specificity of breast cancer cytodiagnosis**

*André F, et al. Lancet Oncol. 2009,10:381-90*

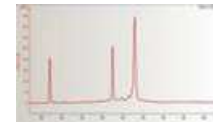
# Perspectives



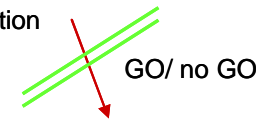
Fine Needle Aspirate  
(less than 1 min)



Total RNA extraction  
(< 2 hours)



RNA qualification  
(< 30 min)



RNA amplification  
(< 7 hours)



Fragmentation and labelling  
(< 2.5 hours)



Hybridisation  
(16 hours)

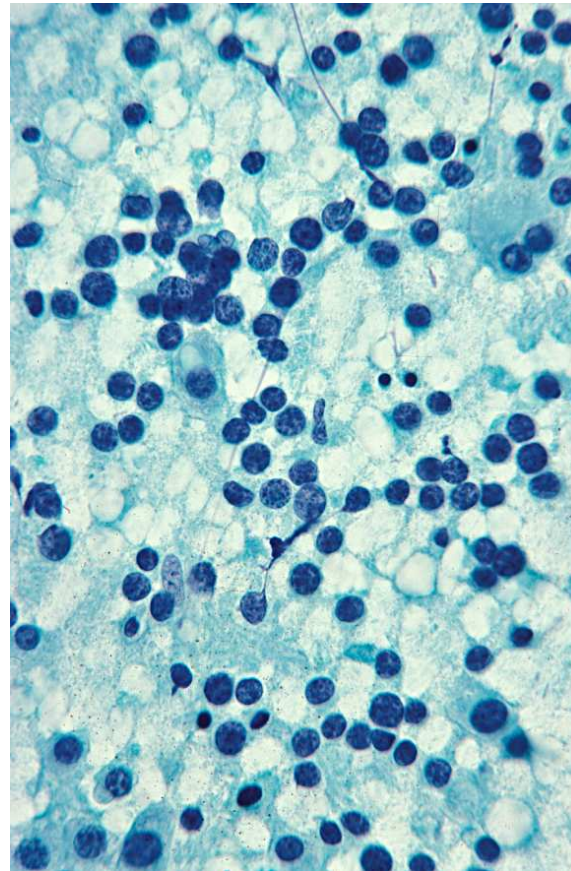
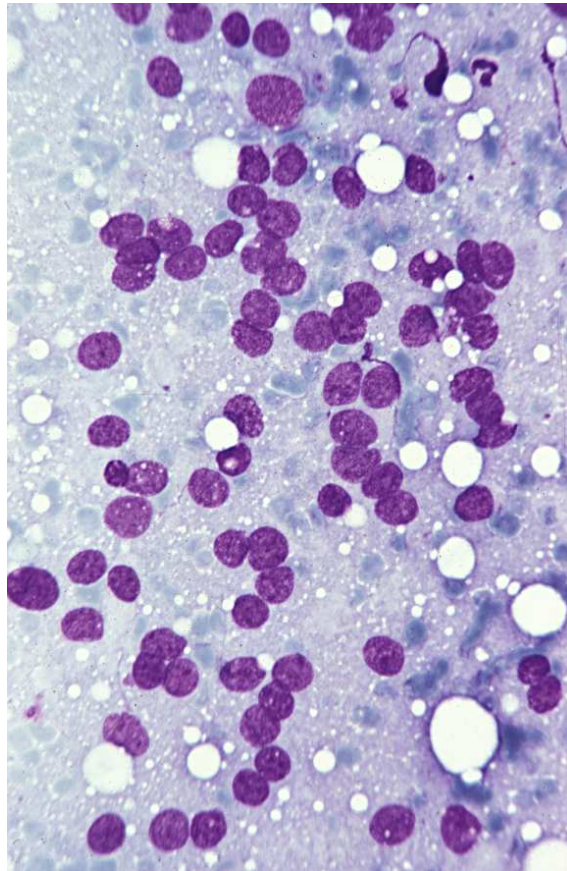


Affymetrix Gene Chip station  
(washes, staining and scanning)  
(< 4 hours)

Diagnostic result



# Benign or malignant?





# Thanks to:

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- **Les équipes médicales: Corinne Balleyguier, Voichita Suciu, Clarisse Dromain, Daniel Vanel, Eladi Bayou, Jean Rémi Garbay, France Rochard, Damienne Castaigne, Catherine Uzan, Sébastien Gouy, Andréa Cavalcanti, Hugo Marsiglia, Céline Bourcier, Patrice Chaurin, Fabrice André, Marc Spielmann, Julien Domont, et les autres qui sont partis ou que j'oublie**
- **Les équipes soignantes: Pascale, Anna, Anna-Maria, Claudine, Nathalie, Coralie, Françoise, Muriel, et Marie Paule Etcheverry et Olivia Ribardière**
- **Les assistantes médicales: Nathalie, Marie Ange, Véronica, Stéphanie, Sandrine, Virginie, Martine, Audrey, Johanne, Anne Sophie, et Christine Proust**
- **Les filles de l'accueil: Marie Claire, Brigitte**
- **Les techniciens de cytopathologie: Anne Marie, Serge**
- **Les manip radio**
- **Les dames en rose**
- **Le service d'oncopsychologie: Sarah Dauchy, Franck Zenasni, les psychologues**
- **Gérard de Pouvourville et son équipe, Eric Noel**
- **Le département de BSE: Stephan Michiels, Ellen Benhamou, Christine Larue**
- **La business Unit sein de l'UPRES EA 3535: Véronique Scott, Isabelle Laurent, ainsi que Vladimir Lazar, Mahasti Saghatchian**
- **Le département Biopath, le département d'Imagerie, le plateau de consultation**