

**B22**

**Tamer YOUSSEF**

**Egypt**

## **Ductoscopy and Ductography**

Nipple discharge disorders are a field in which there has been both increasing awareness on the part of patients and advances in management. Numerous methods are used including: ultrasonography , mamography , galactography , MRI , nipple discharge cytology, ductal lavage and cytology even surgical excision for diagnosis of the aetiology of nipple discharge are proposed.

Ductoscopy allows visualization of the breast ductal wall and sampling of the abnormal area for diagnostic purposes. Ductoscopy is indicated in pathologic nipple discharge, patients with known breast cancer undergoing lumpectomy and patients who are at high-risk for developing cancer but have normal breast exam and imaging studies. However, ductoscopy also has many limitations including length of ducts and biopsy techniques.

**C13**

*Tamer YOUSSEF*

Egypt

**Timing for Reconstruction of Mastectomies**

- Following mastectomy for breast cancer, reconstructive surgery reduces anxiety and thereby improves the quality of life for many women.
- Breast reconstruction can be done at the time of the mastectomy (immediate breast reconstruction), or at any time after the mastectomy (delayed breast reconstruction).
- In recent years, immediate breast reconstruction has gained wider acceptance. Breast reconstruction can be performed using either prostheses or autogenous tissue. The timing of breast reconstruction is determined primarily by patient factors and the need for post operative radiotherapy.

**A18**

**Stephanos ZERVOUDIS**

Greece

## **Papilloma and Ductal Ectasia**

Papilloma and Duct Ectasia are the two most frequent causes of organic pathological nipple discharge. The semiology is different than galactorrhea with or without hyperprolactinemia from organic nipple discharge. The organic type is a true persistent unilateral uniduct discharge, in general bloody or pink-brown discharge.

The clinical examination will try to identify the characteristics of the discharge and associated breast problems (lump, lymph nodes). Mammography is normal in more than 90% of cases. In the contrary, ductography can identify the location of the lesion in the ductal tree, and ultrasonography can give a clear image of the lesion in the case of papilloma , duct ectasia or carcinoma.

The main exam is the cytological examination: It could be done after direct nipple discharge sampling or with the use of the mammary pump. The cytological classification of the lesions according to Masood criteria is more objective; however, cytology accuracy is high (sensitivity > 65%, specificity >75%) in our experience with the help of the mammary pump. Complementary techniques are duct lavage which increases the accuracy of diagnosis, and ductoscopy that visualizes directly the lesions. During ductoscopy, biopsy and removing of the pathological duct is possible in specialized centers.

The treatment of organic nipple discharge depends on the cause, but surgical excision of the pathological duct(s) is mandatory to obtain histological examination and to treat the lesion. The surgical procedures are major duct excision (Urban, Hanfield procedures), pyramidectomy (Lansac) , microdochectomy ( Sharma) and transnipple pyramidectomy, a minimal invasive technique done with a very short incision in the nipple ( Zervoudis 2007). The accuracy of the procedure and the aesthetical results are excellent. Moreover the Japanese teams (Matsugana 2004) described the microdochectomy by ductoscopy.

**A15**

**Stefan VOICULESCU**

Romania

**ADENOMAS: Clinical, Pathological  
and Diagnostic Methods**

Adenomas are benign tumors consisting in ductal and acinous as well as stromal proliferation, clearly confined by a capsule. Their prevalence is as much as 20% of the benign conditions of the breast.

Adenomas are usually non painful, single (80%) oval shaped with sharp limits, firm/elastic masses, less than 3 cm in size, in women under age of 30 (75%). Black race, signs of progesterin insufficiency, adenoma antecedents and genetic syndromes may enhance the risk of having a breast adenoma.

Usually, they grow slowly (T2 longer than 18 months) and, in 5 years after diagnosis, only 23 to 54% are continuing to increase, while 30 to 40% regress. As complications, they may turn into sarcoma (up to 0.5%), associate LCIS (0.1%), suffer infarction or induce deformity of the breast.

The growth is usually periductal (lobular, stromal), but may be intraductal (epithelial). This leads to several pathological forms of adenomas (juvenile, giant, complex, tubular, lactating, phyllodes), designated by stromal:epithelial ratio, stromal mitoses, ductal structures, general pattern.

The diagnosis is sustained by typical clinical features, sono(elasto)graphy, mammography, MRI and (FNA) cytology. The most valuable imagistic data are furnished by ultrasound scanning. Core biopsy is indicated when the tumor exceeds 4 cm, grows rapidly, has suspect imagistic features (irregular margins, non homogenous structure, hypervascularisation) or on patient's demand.

Medical treatment with danazol or tamoxifene is debatable. Lumpectomy, cryosurgery, radioablation or ABBI are recommended over the age of 35, in case of persistent growth or suspicion concerning the tumor's nature, in tumors larger than 3 cm or at patient's request.

**A02**

**Saad BIZRI**

**Lebanon**

**Nipple – Areola Complex and Blood Supply**

Studies have showed that in small peripherally located tumors, the nipple -areola complex can be preserved during mastectomy.

In this presentation I will describe the anatomy of the NAC, its blood supply and then 2 studies showing the advantages and indications of skin sparing mastectomy with conservation of the NAC.

Conclusion: nipple -sparing mastectomy combines a skin sparing mastectomy with preservation of the NAC, intra operative pathological assessment of the nipple tissue core, and immediate reconstruction, thereby permitting better cosmesis for carefully screened patients.

**A13**

**Niki AGNANTIS,**

**Anna GOUSSIA**

Greece

## **Classification of Precancerous Diseases: Columnar Cell Lesions**

The development of breast cancer is considered as a multistep progress originating in the terminal duct lobular units (TDLUs) and progressing to invasive disease. The well characterized precursor lesions are atypical ductal hyperplasia (ADH), atypical lobular hyperplasia (ALH), ductal carcinoma in situ (DCIS) and lobular carcinoma in situ (LCIS). Recent attention has given in another group of TDLUs lesions, called columnar cell lesions (CLLs), that have become a frequent finding in breast biopsies performed for mammographic microcalcifications.

Intraepithelial breast lesions with columnar cell morphology have puzzled Pathologists for many years. In their simple description, CLLs are characterized by the presence of tightly packed columnar cells lining distended TDLUs. Other morphologic features include the presence of elongated nuclei, prominent apical snouts and intraluminal secretions or microcalcifications. CCLs are not a new entity and in the past various terms have been used for them, such as “blunt duct adenosis”, “columnar alteration with prominent apical snouts and secretions”, “enlarged lobular units with columnar alteration”, “atypical cystic lobules”, “clinging carcinoma of monomorphic type”, “well differentiated DCIS with a clinging architecture”.

**Classification and histological features** Although CCLs are now well recognized lesions, confusion still exists among Pathologists concerning terminology. In the initial classification by Schnitt and Vincent-Salomon (2003), CCLS were divided into two broad categories: columnar cell change (CCC) and columnar cell hyperplasia (CCH). CCC is characterized by only two layers of cells; when cellular stratification with more than two layers, with crowding, overlapping, tufts, fronds, short micropapillae or rigid bridges is present, the term CCH is used. Accordingly to the degree of architectural and cytological changes, CCLs were subclassified by Simpson et al (2005) into six categories: CCC without cytological atypia, CCC with cytological atypia, CCH without cytological atypia, CCH with cytological atypia, CCH with architectural atypia and CCH with architectural and cytological atypia. Those cases with cytological atypia show round or ovoid rather elongated nuclei lacking the normal perpendicular orientation to the basement membrane, variable presence of nucleoli, occasional mitotic figures and mildly increased nuclear to cytoplasmic ratio. According to the current WHO classification, CCLs with cytological atypia are referred as “flat epithelial atypia (FEA)” in order to describe “a presumably neoplastic intraductal alteration characterized by replacement of the native epithelial cells by a single or 3-5 layers of mildly atypical cells”. In the latest revision of DIN (ductal intraepithelial neoplasia) system, FEA is designated as DIN1a. It should be noted that FEA is not necessarily “flat”,

but rather does not form complex architectural patterns such as cribriform or micropapillary. Those cases previously categorized as CCH with architectural atypia, due to the presence of cribriform spaces or micropapillae, are now proposed by several Pathologists to be classified as ADH or low grade DCIS, depending on the severity and extent of changes.

### ***Differential diagnosis***

The differential diagnosis of CCLs without atypia includes apocrine metaplasia, pregnancy-like hyperplasia and cystic hypersecretory hyperplasia. Apocrine metaplasia has abundant eosinophilic granular cytoplasm, absence of luminal secretions and calcification as well as no so prominent apical snouts. Pregnancy-like hyperplasia displays pale-clear, vacuolated cytoplasm of epithelial cells and cystic hypersecretory hyperplasia is characterized by flat columnar epithelial cells and colloid-like luminal material. The differential diagnosis of CCLs with atypia includes ADH and low grade DCIS. For lesions that fall of the criteria proposed for ADH and low grade DCIS, the term CCL with atypia is appropriate.

### ***Immunohistochemical and molecular features***

CCLs show immunopositivity for ER, PR, Bcl2, luminal cytokeratin 19 and cyclin D1. The lesions are negative p53, HER2/neu and basal cytokeratins 5/6 and 14. Ki67 positivity is generally low. Genetic/molecular profile of CCLs, particularly these with atypia, resembles that seen in ADH and low-grade DCIS or even in some low-grade invasive carcinomas: loss on 9q, 10q, 16q and 17p, gain on 15q, 16p and 19 as well as LOH at 11q, 16q and 3p.

### ***Biological and clinical significance***

CCLs seems to be biologically significant lesions, since the coexistence with more advanced entities may suggest that CCLs probably represent a very early form of malignant changes. There have been several reports describing the association of CCLs with low-grade DCIS or LCIS and invasive tubular carcinoma (this coexistent triad has been proposed as “Rosen triad”). Moreover, the concept of a family of “low-grade nuclear breast neoplasia” has been reported recently, based on the significant coexistence of precursor (ADH), in situ (DCIS, LCIS) and invasive neoplastic lesions (tubular, tubulolobular and lobular carcinoma) along with CCLs. The findings of these studies suggest that CCLs are the earliest morphologically identifiable, non-obligate precursor lesion of low-grade nuclear breast neoplasia. Whether the risk for subsequent development of breast cancer is due to the presence of CCLs alone or whether CCLs predict the development of higher risk lesions such as ADH or DCIS is not currently known. Although the risk of progression across this group of lesions appears to be low, it is believed that women with CCLs should have a follow-up. Whether further tissue excision should be recommended for CCLs detected in core biopsies remains controversial. However, there are limited outcome data which indicate that subsequent excision shows a more advanced lesion in 20-30% of cases when CCLs with atypia is identified in core biopsy. Further studies of large numbers of cases with core biopsies and with follow-up of the women are required in order to clarify the clinical significance of CCLs.

### ***Conclusions***

CCLs are being identified with increasing incidence in breast tissue specimens undertaken for the assessment of mammographic microcalcifications. Although the disagreement in terminology still continues, it is apparent that CCLs with atypia are seen in relation to ADH,

low-grade DCIS, LCIS and low-grade invasive carcinomas. Despite these associations, the risk of developing subsequent carcinoma after the diagnosis of CCLs with atypia is not clear yet. The practical issue is that the identification of CCLs in breast tissue samples should lead the Pathologist to search carefully for the other associated advanced lesions.

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**B24**

**Monica CASTIGLIONE**

**Switzerland**

**Breast Clinic**

Medicine is moving from the concept of specialties with individual physicians treating individual patients to the concept of a multidisciplinary team of professionals including a number of specialties treating an individual patient with a specific pathology. For breast cancer we have several intervening “actors”, among others, radiologists, radiology technicians, anesthesiologists, surgeon/gynecologists, nurses, oncologists, psychologists, physiotherapists, nutritionists, social workers, spiritual /religious counselors, and many more.

Multidisciplinary is nowadays the only way to have a high quality treatment for breast cancer patients.

The concept of team is mandating that the work of all these professionals is coordinated in order to avoid confusion and errors or delays in the treatment of a patient. In addition procedures in the breast clinic need to be agreed upon among the different actors and clearly described in Standard Operating Procedures documents and the pathway of the patient in a breast center needs to be defined and followed by the mean of clinical itineraries. For this reason it is mandatory to have in breast centers a case-manager, a new health professional that is supervising the way of the patient.

Another objective of a breast center is to have a reasonable number of cases in order to develop the best expertise of the different professionals. Several studies have shown that outcome of patients treated in centers with a high case load is better than in centers with a small number of patients treated.

Continuous education is also mandatory in a breast center for all the health professionals, in particular as knowledge on breast cancer and its treatment are very quickly progressing needing a regular update for all intervenients.

Research performed in breast centers has been shown to be a favorable “prognostic factor”: patients treated in centers performing clinical and/or translational research have a better outcome than patients treated in centers without research program.

Certification/accreditation procedures by different national/international societies like the EUSOMA (European Society of Mastology) are highly relevant as they allow a quality control and a benchmarking among different centers.

These centers will hopefully increase the quality of care of breast cancer patients and help reducing the suffering of these women.

**B10**

*Monica Castiglione*

Switzerland

## **Chemoprevention of Breast Cancer**

Several agents, drugs and food constituents have been investigated in the setting of breast cancer prevention.

Considering the role of estrogens in the growth of breast tumors the largest experience has been collected with the use of anti-estrogens. It is however still unclear whether antiestrogens will act as primary or secondary prevention in breast cancer.

Large randomized clinical trials have investigated the role of tamoxifen, of raloxifen and of lasofoxifen in different populations and the results have shown a large benefit for the use of these compounds. The results show a reduction of breast cancer by about 40% for antiestrogenic drugs.

Despite these highly positive results the use of these antiestrogens in the clinical setting has been very scarce and even in the US only 0.8% of women that may benefit from this approach are receiving it. This finding is possibly due to the not negligible side effects of antiestrogens (endometrial cancers, cataract, thromboembolic disease, etc.). In the attempt to decrease side effects and possibly to further improve results, aromatase inhibitors are currently under investigation in this setting and the IBIS trial is comparing anastrozole for 5 years to placebo.

Several other drugs are possible candidates for breast cancer prevention, but none has reached level I of evidence: aspirin, cox-2-inhibitors, statins, retinoids, metformine.

Food constituents are claimed in the prevention of breast cancer but none has shown activity in a well designed randomized clinical trial.

The continuous increase in our understanding of breast biology will hopefully allow us to develop more targeted preventive tools that will allow to decrease the burden of morbidity and mortality of this disease.

**C02**

**Michel DAHER**

**Lebanon**

## **Surgical Management of DCIS and LCIS**

The diagnosis of Ductal Carcinoma in-situ (DCIS) and Lobular Carcinoma in-situ (LCIS) has dramatically increased because of the widespread use of screening mammography. Most new cases are nonpalpable and are discovered by mammography.

DCIS is a heterogeneous group of lesions with diverse malignant potential and a range of controversial treatment options.

Overall size and extent of the lesions, as well as grade and possibly other cytologic and histologic attributes, are important to the major decision-making tree. It is important to determine whether an individual lesion can be excised adequately, with clear margins, and the patient returning for mammographic surveillance, or whether further therapy is warranted.

Smaller and low-grade lesions can be adequately excised locally and need no further treatment for risk of local recurrence. Treatment ranges from simple excision to various

forms of wider excision (segmental resection, quadrant resection, etc), all of which may or may not be followed by radiation therapy. Careful analysis of resection margins is required. It is widely accepted at the present time that 1-cm margins are necessary to be certain that there will be no recurrences. However, many practitioners with more than a decade's experience with local excision of low grade lesions accept a 2-mm margin if the pathologist has completely sectioned the sample and knows that the margins are negative in 3 dimensions by complete histologic evaluation. Reexcision lumpectomy is necessary in 48% to 59% of lumpectomies for ductal carcinoma-in-situ that result from close or positive margins. If disease is left behind and not treated further, and if margin evaluation and mammography are not performed, the disease may evolve into invasive carcinoma, usually over 10–15 years.

Patients with extensive DCIS and LCIS and positive margins have very high rates of local failure, prompting more extensive operation, even mastectomy, and more aggressive radiation therapy.

As our understanding of the diagnosis and treatment of this disease develops, a coordinated team approach is optimal.

**A06**

***Viviane SMAYRA***

**Lebanon**

## **Histology of Breast Tissue**

The mammary gland is composed of 15 to 25 lobes, each emptying into a major excretory duct terminating in the nipple. The major ducts are dilated just before their distal end and form lactiferous sinuses. Each lobe is subdivided into many lobules, the basic structural units of the breast. The lobule is further divided into ductules and acini which constitute the terminal duct lobular unit. The ducts and acini are lined by a double-layered cuboidal epithelium, composed of a low, flattened layer of contractile myoepithelial cells beneath more prominent luminal epithelial cells. The lobules are enclosed by a loose myxomatous connective tissue (intralobular stroma) but the majority of the breast stroma lies between the lobules and is composed of dense fibroconnective tissue admixed with adipose tissue (interlobular stroma). Breast epithelium and stroma are highly influenced by the levels of estrogen and progesterone. Changes occur in the breast tissue in association with the menstrual cycle, pregnancy, lactation and menopause.

**A21**

**Georges IATRAKIS**

Greece

## **Abscesses and Mastitis**

As a first step in “mastitis”, confirmation of diagnosis is needed with exclusion of other causes of breast discomfort or fever. If there is no evidence of septicemia, management is offered in an outpatient basis. The gold standard of therapy includes overcome of ductal obstruction by continuing breast-feeding or pumping and symptoms relief (with a possible initiation of antibiotics). If there is good response, follow up will continue on an outpatient basis. If poor response is concluded, infection with resistant organisms or noncompliance with recommendations must be excluded. In case of abscess, surgical intervention must be considered.

Recently, ultrasonography-guided drainage was proposed as the first-line approach for the treatment of breast abscess. In the very rare instance of continued “ductal obstruction” consider breast consult to exclude underlying malignancy.

**A10**

**Georges IATRAKIS**

Greece

**Breast Changes During Pregnancy  
and Lactation**

Progesterone, estrogen, placental lactogen, prolactin, cortisol and insulin action contribute on growth and development of alveolar and ductal system of the breast during pregnancy, and the alveolar secretory epithelium synthesizes several milk components.  $\alpha$ -lactalbumin stimulates lactose synthase to increase milk lactose. Progesterone inhibits and prolactin stimulates  $\alpha$ -lactalbumin production. With delivery, there is an abrupt and profound decrease in the levels of progesterone (and estrogen). Progesterone withdrawal allows prolactin to act unopposed in its stimulation of  $\alpha$ -lactalbumin production. Prolactin is very important for lactation, and women with extensive pituitary necrosis (Sheehan syndrome) do not lactate.

**B03**

**Taha ALLAWATIS**

**Oman**

**Lobular Carcinoma in Situ**

## **BACKGROUND**

Lobular carcinoma in situ or LCIS was first described in 1941 by Drs. Foote and Stewart, pathologists. It is often an incidental finding and its importance is serving as a marker for the development of invasive carcinoma in either breast. There is no mass lesion or mammographic abnormality associated with this disease. The pathologist is the only physician who makes this diagnosis. Women with LCIS have a 10 to 20 percent life time risk of developing invasive breast cancer in either breast. Fortunately, effective screening and treatment options are available to reduce the risk of invasive breast cancer in women with LCIS.

## **EPIDEMIOLOGY**

**Incidence:** Range from 0.5-3.8% of otherwise benign breast biopsies

**Age:** Greatest before menopause and <10% are postmenopausal

**Invasive Carcinoma:** About 15% of patients will develop an invasive carcinoma. This risk is greatest within 10-15 years after the diagnosis is established.

In our presentation we will look also in the causes, diagnosis and management of this condition

**C08**

***Ramzi MAAMARI***

**Lebanon**

**Augmentation Mammoplasty  
(Prosthesis)**

A breast implant is used in cosmetic surgery to enlarge the size of a women's breasts (breast augmentation) , or to reconstruct the breast ( in genetic deformities or after a mastectomy ). It consist of a silicone or saline filled implant. Breast augmentation is the third most commonly performed cosmetic procedure in the world. Different approaches are used to insert the implants such as: inframammary , transaxillary , transareolar and transumbilical . The implant pocket should fit the prosthesis and is dissected in a subglandular or subpectoral plan .The major complications of their use involve hematoma in the earlypostoperative period, infection, capsular contracture, rupture and silicone granulomas . With the new type of implants, the incidence of capsular contracture has diminished .Both palpable and nonpalpable breast lesions can occur in patients with implants, and these lesions must be evaluated in the same manner as in patients without implants, which presents a challenge for the Radiologist.



**B09**

**Fadi ABBAS**

**Lebanon**

## **Management for High Risk Patients**

In recent years, we have seen a decrease of detection in developed countries of metastatic and locally advanced breast cancers, and mainly due to massive screening and increase awareness for detection of breast cancer in early phases. Those screening methods and integration of the classical and known factors and genetic counseling, in the medical assessment of family doctors, General practitioners, gynecologists, and other healthcare professionals, contributed for detection of more stage I breast cancer. Unfortunately, this improvement is not yet that much seen in developing and under developed countries where the picture is still upside down and more advanced diseases are detected than local breast cancer. Moreover, with all the advancement, many patients and around 40% are still detected with advanced diseases, with high rate of relapse and high mortality rate. A part of the population (20-40 years and 75 years and above) is not really targeted in the screening methods, and should be considered for a specific evaluation tools. Better treatments for locally advanced breast cancer have come into broad use and have shown significant benefit for some Stage III patients. Some teams will propose an intensified treatment with a rescue of autologous bone marrow transplantation. After the new genomic classification of breast cancer, (Luminal versus basal) a new entity of high risk breast cancer have appeared. The Triple negative breast cancer patients are early relapsers, and would need a special management with Neo-adjuvant chemotherapy, especially high dose of cisplatin. Others are testing the principle of prolonged adjuvant treatment. If the treatments are improving, defining strategies of screening needs also to improve

**B08**

**Michel SAADE**

**Lebanon**

**Genes and Cancer**

Genes are at the basis of breast cancer development in a minority of patients. Less than 10% of patients with breast cancer are related to genetic mutations. *BRCA1* & *BRCA2* gene have high penetrance. Other genes *TP53*, *ATM*, and *CHEK2* have low penetrance. Their respective mutations cause breast cancer in the majority of cases. These genes are identified. Screening is indicated in case of high risk patients and relatives. Founder mutations occur in certain specific groups : Ashkenasi jewish women, and Icelanders. Prognosis and overall survival in patients with genetic mutations have been studied with different results. Management is usually guided by the risk status and patient's choice. Specific therapy has been an ongoing research field.

**A16**

**Stephanos ZERVOUDIS**

Greece

**Mastodynia**

Mastodynia is a very frequent complain in women and more in young patients. The breast pain could be intense PMDD( Premenstrual dysphoric disorder ) and create social and professional difficulties .The etiology and optimal treatment remain multifactorial, and the treatment depends of the cause. Breast pain can be classified as cyclic mastalgia ( 70%), noncyclic mastalgia ( 20%), and extramammary (non breast) pain ( 10%). Cyclic mastalgia is related to to the menstrual cycle, and is included in the premenstrual syndrome. Noncyclic mastalgia often occurs more often after menopause, or after previous breast surgery (lumpectomy, partial mastectomy, palstic surgery) . Extramammary pain is different form mastodynia and can arises from the chest wall , the neck or other origins independant of the breast .The physiopathology of mastoldynia is controversed, hormonal unblanced of progesterone, serotonin , prolactine,and the role of GABA nd Magnesium have been proposed . Moreover mastodynia is frequently associated with anxiety, depression and social dysfunction. After breast examination,a breast ultrasound is mandatory and in older patient a mammography can be proposed. In general mastodynia is very rarely associated with breast cancer. FNA and core biopsy is necessary only in case of lump associated with mastodynia. Most patients with breast pain respond favorably to a combination of reassurance, avoid methylxanthines ( coffee, tea, chocolate, coke), wear a sport bra. Natural medicatons : Evening primrose oil, Agnus Castus, natural diuretics are in many cases efficient. More severe cases PMDD requests :Oral contraceptives, progestins, danazol, bromocryptin, also in some cases tamoxifen. Non cyclic mastodynia could be treated with non steroidal antiinflammatories and or topical xylocaine. In summary mastodynia is a symptom, part of other syndroms , and in many cases organic and psychosomatic cause are involved.

**A14**

*Sahar El-RASSI ZANKOUL*

Lebanon

**Proliferative Lesions with and without Atypia**

Proliferative lesions of the breast are associated with an increased potential for developing breast carcinoma. Their relative risk as precursors of breast cancer varies according to the type and extent of the initial lesion. We raise the issue of the role of the pathologist in detecting the different types of proliferative lesions with their clinical implications according to their relative risk and to the incidence of associated malignant and premalignant lesions in the same or contralateral breast. These lesions are histologically stratified based on specific morphologic features along with their malignant potential and a brief genomic comparison in an attempt to have the best way of treatment surgically or by clinical follow-up and exam. They encompass strictly benign conditions to florid epithelial hyperplasia, with or without atypia, ductal papillary and premalignant lesions to DCIS and LCIS. We also discuss the utility and reliability of immunohistochemistry in establishing a diagnosis in borderline cases.

**C10**

**Marwan ABBOUD**

**Saad DIBO**

**Belgium**

**The Deepithelialized Thoracodorsal  
Flap, A New Concept for Autologous  
Breast Reconstruction**

The purpose of this study was to share 10-year experience with a new concept in autologous breast reconstruction using the deepithelialized thoracodorsal (TD) flap. The latter combines a deepithelialized latissimus dorsi (LD) musculocutaneous flap with a fasciocutaneous thoracic extension. A retrospective analysis of all the files of patients who underwent TD flap reconstruction between 1999 and 2009 was done. The total number of TD flaps was 247, combining immediate, delayed, unilateral as well as bilateral breast reconstruction. 77% of the patients had received breast radiotherapy. Prosthetic implants were only applied bilaterally for cosmetic purposes in patients desiring large breasts. The complication rate was 11.4 % with no reported total flap loss nor fat necrosis. The seroma rate was 7% after all the drains had been removed, and that of wound dehiscence was 0,44 %.the Mean hospital stay was 3 days(range 2 to 5). Contralateral breast remodeling was performed in 92 % of the cases and fat grafting in 14% of the cases. With an average follow-up of 4 years, patient satisfaction was rated high by the patients. In conclusion, the TD flap is a safe and reliable surgical technique with a wide range of applications in breast reconstruction. Its main advantages include achieving large breast volumes circumventing the use of prosthetic material, avoiding the patch look on the reconstructed breast, improving the skin quality mainly following radiotherapy and achieving considerable tissue expansion, while insuring minimal donor site morbidity.

**C12**

**Marwan ABBOUD**

**Saad DIBO**

**Belgium**

**Auto Skin Expansion in Secondary Breast Reconstruction using Flaps without Expander: A New Concept**

The purpose of this study was to share the authors 10 years experience with a new concept in autologous delayed breast reconstruction using deepithelialized pedicled flaps in order to achieve tissue expansion without the use of allogenic expanders. A retrospective analysis of all the patients who underwent deepithelialized Thoracodorsal flap (a combination of a musculocutaneous LD with a thoracic fasciocutaneous extension), Latissimus dorsi flap or Deepithelialized TRAM flap reconstruction between 1999 and 2009 was performed. A total of 208 patients including 137 Thoracodorsal, 60 TRAM and 11 Latissimus dorsi flaps were recorded. All the flaps were buried and no skin paddles were used in any of the cases. Although no complete flap loss was reported, fat necrosis was found in 12 % of TRAM flaps. Tissue expansion without the need of allogenic expanders nor implants was achieved in all the patients; expansion over the non irradiated breast occurred over the 3 months following reconstruction, where as that over irradiated breasts occurred gradually over the 5 months following reconstruction. The average breast size obtained was C cup. Secondary procedures included lipofilling (10 %) and contralateral breast remodeling in 93 % the cases. In conclusion, tissue expansion over the reconstructed breast can be solely achieved by autologous tissue. This method provides an autologous breast reconstruction circumventing the use of prosthetic material. The main advantages of this technique are sparing the patch look of skin paddles, improving the skin quality mainly following radiotherapy and attaining considerable tissue expansion that gradually occurs following the surgery.

**B12**

***Taha ALLAWATI***

**Oman**

## **Prophylactic Mastectomy**

- Preventive mastectomy (prophylactic or risk-reducing mastectomy) is the surgical removal of one or both breasts without malignancy.
- The aim of it is to prevent breast cancer.
- Breast cancers which may develop in the glandular tissue of the breast, specifically in the ducts and the lobules.
- Indications for this procedure will be reviewed.
- The patients who are candidate for this procedure are, patients at high risk which will be categorized in our presentation.
- The presentation will at the end illustrate the surgical procedures, the outcome and the follow up of them.

**B04**

**Stefan VOICULESCU**

**Romania**

**Paget's Disease**

Two major theories are discussed concerning breast Paget disease pathogenesis:

- Specific cells from an underlying ductal carcinoma (present as invasive or in situ in up to 97% patients with mammary Paget disease) migrate through the duct and implant themselves in the nipple and areola
- Skin cells from the nipple transform spontaneously in Paget cells (being bound by adjacent cells by desmosomes, appearing even in areas of congenital absence of nipple-areola complex and with no anatomic connections to the sometimes distant breast tumor, carrying a focal *neu* gene overexpression)

Five percent of breast cancers are Paget diseases, the patients' mean age being 62 for women and 69 for men (but 30% being under 50). Relatively typical lesions involve most frequently unilateral the nipple areolar region by an eczema-like rash (red, itchy or burning, flaky, oozing skin, cracked or ulcerated nipple with straw-coloured or bloody discharge, the nipple tending to flatten or invert. Despite topical treatments the symptoms persist and the patient comes to a specialist after a mean delay of 6 to 8 months. At this time half of the patients already have a palpable mass beneath the areola, sometimes even axillary palpable nodes.

The diagnostic begins with an imagistic evaluation, but essentially needs a pathological confirmation. Cytology from nipple discharge, imprint or scrape may be useful, but it is preferred a skin and/or tumor biopsy revealing the giant Paget cells (better differentiated by immunohistochemistry)

Mastectomy +/- sentinel node or axillary dissection is recommended (+breast reconstruction?). Chemo/radiotherapy may be also needed, as well as tamoxifen or anastrozole.



**A24**

**Patricia HASWANI**  
**SALIBA**  
**Lebanon**

## **Pathogenesis of Microcalcifications**

Microcalcifications constitute one of the most important diagnostic marker of both benign and malignant lesions of the breast. Analysis of microcalcifications has revealed two distinct forms (type 1 and type 2) in breast disease, on the basis of their morphologic appearance and chemical composition. The genesis of these calcifications is not yet confirmed , the issue as to whether it is a sign of degeneration or of an active cell process is still unresolved. Hydroxyapatite crystals are believed to facilitate breast carcinoma progression because of their ability to induce mitogenesis and matrix metalloprotease MMP production . Furthermore , the carbonate content of breast microcalcifications was shown to significantly decrease when progressing from benign to malignant disease.

**A09**

***Rana SKAFF***

**Lebanon**

## **The Physiology of Menopause**

The onset of menopause is a significant life event for women, carrying with it medical, psychosocial, and cultural significance. Defined traditionally when a woman does not have a spontaneous menstrual period for 12 months. The perimenopause, transition, defined as the time between the onset of menstrual irregularity and the menopause. The median age of menopause has been fairly consistent over centuries and across modern epidemiologic studies and generally falls between 50 to 52 years of age. The average being age 51. The physiology of menopause is exceedingly complex and may vary considerably among patients. However, depletion of ovarian follicles, or decreasing ovarian reserve, is the basis for reproductive aging and the menopausal transition. Various signs and symptoms accompany the woman during the pre and menopausal years and each has its physiologic significance. Our duty as physicians is to acknowledge these changes and help our patients in guidance and treatment through those years.

**A20**

***Kaled HABIB***

**Lebanonc**

**Hamartoma**

Breast hamartoma is a solid, benign mass that forms in the soft tissue of the breast. It is made up of both connective and glandular tissue components. Frequently diagnosed in young women, a breast hamartoma that remains unchanged often requires regular monitoring, but no treatment. In instances where the hamartoma changes shape or increases in size, a biopsy and surgical removal of the mass may be performed. Rarely does a breast hamartoma lead to the development of breast cancer.

The etiology of breast hamartoma is unknown. It has been asserted that hormones contribute to its formation. Often, women with a breast hamartoma who are pregnant or breast-feeding may experience an enlargement of the mass, which should be monitored.

The solid mass that forms within the breast tissue is palpable and may be easily moved, possesses distinct shape, and causes no discomfort. Masses which measure up to about 2 cm in size are considered normal, and those measuring about 5 cm or more are classified as large.

Imaging tests, such as an ultrasound and mammography, may be administered to locate, characterize, and measure the breast hamartoma. Additionally, a fine-needle aspiration and core needle biopsy may also be conducted.

The fine-needle aspiration is usually non contributive. For better tissue collection a core needle biopsy is recommended in suspicious cases.

The surgical removal of a breast hamartoma is often recommended when clinical and diagnostic test results are abnormal, in women whose breast shape has been altered due to the mass or who are uncomfortable with leaving the hamartoma in place.

**B07****Chafic CHRAIBI**

Morocco

**FACTEURS DE RISQUE DU CANCER  
DU SEIN**

Le **cancer du sein** est le cancer le plus diagnostiqué chez les femmes à travers le monde, autant avant qu'après la ménopause<sup>1</sup>. Une **femme** sur 8 sera atteinte d'un cancer du sein au cours de sa vie, et 1 femme sur 27 en mourra.

Le plus souvent, le cancer du sein survient après 50 ans.

On connaît plusieurs facteurs de risque du **cancer du sein**. Cependant, dans la plupart des cas, il est impossible d'expliquer les raisons de son apparition

**Âge** : La maladie touche très rarement les femmes de moins de 30 ans. Environ 85 % des cas surviennent à **50 ans ou plus**<sup>2</sup>.

**Antécédents familiaux** : 5 % à 10 % des cancers du sein seraient causés par une anomalie transmise par l'**hérédité**.

Les principaux gènes de prédisposition au cancer du sein (et de l'ovaire) sont : BRCA1 et BRCA2

Un antécédent personnel de cancer du sein , une hyperplasie atypique, Une puberté précoce et une ménopause tardive, une exposition aux radiations, Le surplus de poids ou l'obésité après la ménopause, La sédentarité, La consommation d'alcool, la nulliparité ou une grossesse tardive, l'exposition à des produits chimiques cancérigènes sont autant de facteurs de risque plus ou moins reconnus dans la survenue d'un cancer du sein

Quand à la prise d'une hormonothérapie substitutive à la ménopause ou L'utilisation de la pilule contraceptive les études sont controversées mais vont toutes vers le sens d'une légère augmentation

**A22**

**Chafic CHRAIBI**

**Morocco**

**Gynecomastia**

La gynécomastie est une prolifération bénigne du tissu glandulaire mammaire dans le sexe masculin souvent physiologique à certaines période de la vie, cependant elle peut être un symptôme d'où la mise en route d'une enquête étiologique à la recherche de la cause pour notamment identifier une pathologie grave engageant le pronostic vital.

Une cause médicamenteuse en est souvent responsable mais il faut toujours penser au Diagnostic différentiel avec le cancer du sein ++. Son traitement est étiologique, symptomatique, ou chirurgical.

**C07**

**Tarek HOUSAMI**

**Lebanon**

## **Reduction Mammoplasty**

Breast Reduction Breast Reduction, or reduction mammoplasty, is the surgery to reduce the weight, mass and size of the breasts. There are several reasons for requiring this procedure. Backaches, Neckaches, Difficulty in breathing Numbness of any portion of the breasts and upper chest due to the excessive weight of the breasts  
Contraindications for surgery History of irregular mammograms Undiagnosed lumps or other types of masses Diabetes Wound healing and clotting disorders, Lactating (or have recently ceased) The surgery is usually performed with general anesthesia. Ppatients are able to go home the day of surgery Typically, incisions are around the nipple, from the nipple down to the chest wall, and side to side under the breasts The incisions are designed so the scars will not be visible while wearing normal clothing The surgeon removes excess breast tissue and skin then repositions the nipple and areola appropriately. The skin is then closed around the new breast mound A drain may be left in place rarely at the time of surgery and removed several days later. Sutures are removed within the first two weeks following surgery. No external sutures are used. Potential complications of the surgery are: Postoperative rare bleeding or Infection Obvious scars Failure of the nipple and areola to "take" or heal Irregularities in the final size and shape of the breasts or in the positioning of the areola and nipple. Decrease in sensation of the nipple. Permanent inability to breast-feed after having the surgery in old techniques. New technique can breast feed partially.

**B23**

**Joe KHOURY**

**Lebanon**

## **Imaging Guided Biopsies**

Surgical biopsy of the breast has long been the most commonly accepted method of determining the nature of a clinical or mammographic suspicious abnormality. Because this method carries with it certain cost and morbidity drawbacks such as pain, scars and psychological considerations, physicians have investigated less invasive alternatives to supplant surgical breast biopsy.

Today, the different techniques of imaging guidance have dramatically evolved, making the biopsy of almost any suspicious lesion extremely precise and reliable.

Moreover, biopsy techniques for tissue acquisition are now well mastered, and enriched by new techniques that have emerged and are becoming widely available on the Lebanese market.

All of these percutaneous procedures are performed on an outpatient basis, with less cost than surgery, and still as reliable.

**B19**

**Ghina BERJAWI**

**Lebanon**

**New Developments in Ultrasound**

Breast sonography plays an integral role in breast imaging.

Technical advances in the field have made it an essential component of breast imaging evaluation.

The role of breast sonography was primarily to differentiate cysts from solid masses.

Technical advances such as compound imaging and harmonics have improved lesion characterization.

Other technical advances such as Doppler imaging, intravenous contrast, computer-aided diagnosis, sonoelastography and elastography have expanded the clinical application of breast sonography.

Moreover, FDA has approved new technology, SonoCine Automated Whole-breast Ultrasound. Method that now allows radiologists to detect breast cancer sooner and faster.



**B21**

**Sami FADDOUL**

**Lebanon**

## **PET Scan of the Breast**

PET-CT scan has been proven to be a corner stone in diagnosing, staging and monitoring different kinds of cancers based on its ability to detect metabolically active – sugar avid tumor cells.

In breast cancer, PET-CT has valuable applications however not in the diagnosis of primary tumors where Mammography, Ultrasound and recently MRI are the main tools especially for small tumors and also not in lymph node staging where sentinel node remains the gold standard despite the moderate sensitivity of PET (80- 100%) but PET plays an important role in cases of advanced loco-regional disease in assessing efficacy of neo-adjuvant treatment, evaluating spread to regional nodal sites other than axilla sites, such as internal mammary chain and interpectoral sites and in detection of bone metastasis where PET is at least equal or even superior to bone scan in detection of bone metastasis.

In loco-regional advanced cases PET-CT changed management in up to 70% of cases in comparison with conventional imaging.

In confusing cases of “metabolic or Tamoxifen flare” PET-CT will determine response to treatment.

For early detection of recurrent or distant disease, PET-CT surpasses conventional imaging (CT scan, MRI) especially in cases of asymptomatic elevation of tumor markers where PET-CT sensitivity can reach 95 %.

**B20**

**Christine SALEM**

**Lebanon**

## **New Developments in Mammogram**

In recent years, several studies have compared screen film mammography (SFM) and full field digital mammography (FFDM) and have demonstrated that they are at least equal for the detection of breast malignancy, with superiority of FFDM in three subgroups: women with dense breast, women under 50 years old and pre and perimenopausal women. The advantages of digital images includes easier quality management, reduction of radiation doses, soft copy reading, data compression and the implementation of the computer aided detection (CADe) and diagnosis system (CADx).

Recent advancement in digital mammography allowed the development of derivative technologies associated with digital mammography such as tomosynthesis and 3D, contrast-enhanced digital mammography, dual energy FFDM and image fusion. The principle and development of each of these technologies will be discussed in this presentation. The results of early clinical trials will also be reviewed since these new technologies are currently research programs but they hold the promise for improving cancer detection and characterization and could be part in the future of our screening or diagnostic tools.

**B15**

***Nagi ATALLAH***

***Lebanon***

**Screening MRI**

The demand for breast MRI is increasing. Image quality is improving. The sensitivity is high and with high resolution, image specificity is higher based on enhancement or DWI or spectroscopy.

Screening high risk women represent 70% of the indications in the USA in response to the recommendations of the ACS.

Who are high risk women?

- Women with genetic mutations (BRCA), with strong family history or personal history of breast or ovarian cancer
- Life time risk >20-25% is considered as high risk depending on the risk models (Gail or Tyrer-Cuzick), used for risk estimation (NCT, IBIS).

Breast MRI is done in adjunct to mammography because there are some DCIS or ILC that do not enhance.

In that group of women MRI alone detects twice more cancers than mammography alone. But there are some radiologists or other specialists that believe we are living the impending decline of screening mammography.

**B13**

**Michel GHOSSAIN**

**Lebanon**

## **Screening: Methods and Schedule**

Breast screening has proved to decrease mortality and morbidity.

It is based on Self Breast Examination (SBE), Clinical Breast Examination (CBE) and Imaging. Imaging methods include Mammography, Ultrasound and MRI.

Mammography is the first and until now the main screening methods.

Ultrasound is done in adjunct to mammography in case of a palpable lesion, an abnormality on mammography needing characterization and in dense breasts.

MRI is done in adjunct to mammography in women at high risk.

Recommendations may vary between countries and Scientific Societies. The most used are those of the American Cancer Society (ACS) that recommends annual mammography starting at 40 years and as long as the woman is in good health. Special recommendations are given for women at high risk.

In all cases women must be informed about benefits, limits and harms of screening methods.

**B14**

**Michel GHOSSAIN**

**Lebanon**

## **Screening Mammogram and Ultrasound**

Mammography is the keystone of breast screening. It must always be associated to clinical breast examination (CBE).

At mammography, the radiologist will search for three main types of abnormality: a mass, microcalcifications and architectural distortion.

Limitations of mammography are:

- Dense breasts.
- Lesions missed on mammographic films because of their location, especially peripheral lesions. Fortunately, these peripheral lesions are often accessible to CBE.

Ultrasound (US) is indicated in case of dense breasts, mammographic abnormality that needs to be evaluated by US, abnormality at CBE.

We also recommend systematic US of the mastectomy site while screening patients with previous mastectomy.

**A07**

**Faysal El-KAK**

**Lebanon**

## **Changes during Menstrual Cycle**

It is well established that the cyclicity of menstrual hormones affect breast tissue. The effects are related to the two phases of the menstrual cycle: Follicular phase and luteal phase. During the follicular phase, progesterone levels are low and estrogen levels increase in anticipation of ovulation. In the luteal phase, both progesterone and estrogen are elevated. The length of the luteal phase remains relatively constant, whereas the length of the follicular phase can vary dramatically. Women with longer menstrual cycles spend more time in the follicular phase than in women with shorter menstrual cycles. This is important, especially that breast cell proliferation is significantly higher in the luteal phase than the follicular phase. It has been noted that cycles with lesser luteal phases (and longer follicular phases) are at a lower risk of breast cancer. Other changes that are attributed to menstruation and are relevant to clinical and radiologic assessment includes: Density and volume change, remarkable morphologic changes that manifest in four patterns, elasticity dependence on cyclical hormones, blood flow and vascularity, and cell kinetics. This presentation will aim to review these changes and draw clinical relevance for practice

**A17**

**Carlos LOPEZ**

**Portugal**

**Radial Scars**

Radial scar is a benign breast lesion whose identification and knowledge assumes particular importance because, image and macroscopic characteristics are similar to "scirrous" carcinomas of breast . The largest lesions are grossly detectable as an irregular, stellate and firm area. Most of cases, however, constitute non palpable lesions whose detection occurs, by mammography, during screen programs. On histology, radial scar displays a central core of fibrous tissue and, around, distorted ducts and areas of elastosis. The pattern is similar to the ancient so called "scirrous carcinoma"; in contrast, however, persistent myoepithelial cells around the distorted ducts is useful for differential diagnosis.

One of the most significant phenomena occurring in radial scar is the common coexistence around of ductal or lobular intraepithelial proliferations, including low grade ductal in situ carcinoma, lobular in situ carcinoma or invasive carcinomas . For this reason and considering the difficulties in establishing differential diagnosis with carcinoma, the finding of radial scar lesions in core biopsies justifies to proceed to surgical excision of all lesion, in order to examine is totally.

Regarding prognosis, radial scar is a benign lesion. To consider it as marker of increased risk to develop breast carcinoma seems to be not justified. However intraductal proliferations around, some of them with atipia, justifies to be cautious with this lesion and follow-up carefully the patients after total surgical excision.

**B02**

**Carlos LOPEZ**

**Portugal**

## **Ductal Carcinoma in Situ**

Ductal Carcinoma In Situ (DCIS) refers to a group of cytologically and architecturally diverse neoplastic proliferations confined to ductal system. Generally they are multifocal and are associated with an increased risk for the subsequent development of invasive ductal carcinoma. Generalized use of mammography and other image techniques in screen population based programs and in early diagnosis of breast lesions explain how DCIS is becoming common. By image, these non palpable lesions are recognized as irregular microcalcifications in the majority of cases. Other types of presentation are also well known, such as nodules and stromal distortions. In addition to mammography, ultrasound and RMI are also image methods used in the diagnosis of DCIS, essentially to guide fine needle cytology aspiration and core biopsy.

The diversity of histological patterns is well known: comedo, cribriform, solid, papillary, micropapillary and mixed type are the commonest: However, taking in account biopathology and clinical behavior, to join the diversity of histological types in three grades of malignancy is generally accepted: low, intermediate and high grade of DCIS. More recently, the use of molecular pathology technology in the study of DCIS is recognizing luminal A, luminal B, HER2 positive and triple negatives types, which can be helpful in the prognosis and treatment of this type of neoplasias. So, cellular proliferation, as evaluated by Ki67 immunostaining, and basal cell identification, as evaluated by basal cell markers, are also being added to hormonal receptors and HER 2 studies.



**B16**

*Azza SALEM*

*Tunisia*

**Images of Benign Lesions (I)**

Benign breast lesions are very common especially in young women and consist in tumor lesions and non tumor lesions. In this first part we will present images of tumor lesions as fibroadenoma, adenoma, lactating adenoma, hamartoma, phyllode, papilloma, lipoma and angioma. Typical imaging features of mammography, ultrasound and MRI of these benign tumors are illustrated with anatomic correlation. Features that suggest a benign lesion include oval or ellipsoid shape, well circumscribed gentle bilobulation or trilobulation, hyperechogenicity, a thin echogenic pseudocapsule and posterior acoustic enhancement. If these features are not identified in a mass and there is atypical images an ultrasound guided biopsy must be done

**B17**

***Radhi HAMZA***

***Tunisia***

**Images of Benign Lesions (II)**

In this second part, we present imaging features of non tumor benign lesions consisting in cysts, fibrocystic disease, fat necrosis and mastitis. The mammographic and ultrasonographic appearance of these lesions is variable and non specific. By integrating patient history, clinical, mammographic and ultrasonographic findings and with an understanding of breast histopathology, it is possible to approximate a diagnosis and have significant confidence in the appropriate management recommendation. Thus, knowledge of radiopathological correlations in breast diseases helps the radiologists to analyze and characterize the lesions.

**B05**

**Sherif OMAR**

**Egypt**

## **Phyllodes Tumors**

Cystosarcomaphyllodes is a rare, predominantly benign tumor of unknown etiology. Since the name may be misleading, the favored terminology is now phyllodes tumor. Phyllodes tumor is the most commonly occurring nonepithelial neoplasm of the breast, although it represents only about 1% of tumors in the breast. It is a relatively large tumor, with an average size of 5 cm. However, lesions of more than 30 cm have been reported. Because of limited data, the percentage of benign vs malignant phyllodes tumors is not well defined. Reports suggest, however, that about 85-90% of phyllodes tumors are benign but have a tendency to grow aggressively and can recur locally. Unfortunately, the pathologic appearance of a phyllodes tumor does not always predict the neoplasm's clinical behavior; in some cases, therefore, there is a degree of uncertainty about the lesion's classification. Phyllodes tumors occur almost exclusively in females. Rare case reports have been described in males. They can occur in people of any age; however, the median age is the fifth decade of life. Some juvenile fibroadenomas in teenagers can look histologically like phyllodes tumors; however, they behave in a benign fashion similar to that of other fibroadenomas. Although mammography and ultrasonography generally are important in the diagnosis of breast lesions, they are notoriously unreliable in differentiating benign cystosarcomaphyllodes (CSP) from the malignant form of the condition or from fibroadenomas. Thus, findings on imaging studies are not definitively diagnostic of CSP. Fine-needle aspiration for cytologic examination usually is inadequate for the diagnosis of phyllodes tumors. Core biopsy is more reliable, but there still can be sampling errors and difficulty in distinguishing the lesion from a fibroadenoma. Open excisional breast biopsy for smaller lesions or incisional biopsy for large lesions is the definitive method for diagnosing phyllodes tumors. In most cases of cystosarcomaphyllodes, wide local excision is the treatment of choice, with a rim of normal tissue. No absolute rules on margin size exist. However, a 2 cm margin for small (< 5 cm) tumors and a 5 cm margin for large (>5 cm) tumors have been advocated. The lesion should not be "shelled out," as might be done with a fibroadenoma, or the recurrence rate will be unacceptably high.

**A04**

*Helidon NINA*

*Albania*

## **Anatomical Changes due to Puberty**

Puberty is the stage of physical maturation in which an individual becomes physiologically capable of sexual reproduction. Puberty is the time during which there is development of secondary sexual characteristics and attainment of sexual maturity.

The factors responsible for the initiation of puberty are unknown, exist the Frisch theory in which critical body fat & body weight are required for the initiation of menarche.

During this period happens a lot of events which include biological changes and changes in major characteristics as maturation of the first and development of the second sexual characteristics, dramatic growth spurt and physiological changes. The necessary time to complete the puberty is average 4.2 years with range 1.5-6 years.

The physical changes accompanying pubertal development result directly or indirectly from maturation of the hypothalamus, stimulation of the sex organs, and secretion of sex steroids. Effects of estrogens at puberty are notice at establishes female pattern of body fat deposition, bone growth and body hair; Stimulates growth of external genitalia; stimulates growth of internal accessory sexual organs and maintains them in functional state; stimulates growth of breasts, particularly of ductal system and stimulates growth of uterine endometrial during follicular phase of female cycle. Effects of progesterone on the breast are promotes development of lobules and alveoli; causes alveolar cells to proliferate, enlarge and become secretory in nature; does not cause alveoli to secrete milk (actually inhibits the secretion of milk), milk is secreted only after the prepared breast is further stimulated by prolactin.

Generally the first sign of puberty is accelerated growth, breast budding is usually the first recognized pubertal change, followed by the appearance of pubic hair, peak growth velocity, and menarche. To describe breast and pubic hair development are often used the stages initially described by Marshall and Tanner (which are describing in five stages).

*Key words: puberty, estrogen, breast.*

**C05**

**Helidon NINA**

**Albania**

## **Management of Phyllodes Tumors**

Phyllodes tumors account for 0.3% to 0.9% of all breast tumors. This very rare breast tumor develops in the stroma (connective tissue) of the breast, in contrast to carcinomas, which develop in the ducts or lobules. Other names for these tumors include *phylloides tumor* and *cystosarcoma phyllodes*. These tumors are usually benign but on rare occasions may be malignant. Histology of the phyllodes tumor reveals a stromal and epithelial component, and it is the stromal component that is responsible for local recurrence and distant metastasis. Bulk of the mass is made up of connective tissue, with mixed areas of gelatinous, edematous areas. Cystic areas are due to necrosis and infarct degenerations. Phyllodes has greater activity and cellular component than fibroadenoma (3mitoses/hpf); The World Health Organization defines three types of phyllodes tumors based on the histology: benign, low grade (borderline), and high-grade malignant phyllodes tumor. Malignant phyllodes tumors comprise around 25% of all phyllodes tumors. Malignant component is dependent on: number of mitotic figures/hpf; vascular invasion; lymphatic invasions; distant metastasis.

Triple assessment by clinical, radiological and cytological or histological examinations forms the fundamental basis for evaluation of all breast lumps. The preoperative diagnostic accuracy of phyllodes tumor is often poor because mammary phyllodes tumors are rare and their clinical, imaging, cytology and histology characteristics are similar to those of fibroadenomatous breast tumor, which has a high incidence.

The main biological feature of phyllodes tumors is latent malignancy and the course is benign in most cases. Benign phyllodes tumors are treated by removing the tumor along with a margin of normal breast tissue. A malignant phyllodes tumor is treated by removing it along with a wider margin of normal tissue, or by mastectomy. Since phyllodes tumors tend to recur at the local site, local treatment requires wide excision to ensure inclusion of the tumor margin. Mastectomy is the most reliable procedure with regard to local control, but breast-conservation surgery (like Benelli or Madlain Lejoure techniques) is currently selected in most cases (excluding cases with very large tumors) for aesthetic reasons. The frequency of local recurrence has varied from 8 to 46% in previous reports, and age, tumor size, surgical approach, mitotic activity, stromal overgrowth and surgical margin have been reported as prognosis-predictive factors related to local recurrence. Among these, the most important factor may be the surgical margin. In conclusion, in excision of phyllodes tumors it is important to achieve a negative surgical margin for good local control. A phyllodes tumor with a positive

surgical margin diagnosed based on excisional biopsy is likely to have a high local recurrence rate, particularly in cases with stromal overgrowth and a malignant tumor. Thus, in such cases we recommend ensuring inclusion of the tumor margin by re-excision. The literature review has shown that the metastatic phyllodes tumor occurs within the first 3 years of primary resection and is invariably fatal with a mean survival of 4 months from the time of diagnosis

Surgery is often all that is needed, but these cancers may not respond as well to the other treatments used for more common breast cancers. When a malignant phyllodes tumor has spread, it may be treated with the chemotherapy given for soft-tissue sarcomas. The role of RT is no more clear.

*Key words: phyllodes, recurrence, margin.*

**C11**

**Omar OMAR**

**Egypt**

## **Oncoplastic Techniques**

Since the beginning of the 21st century, breast cancer surgery became an onco-plastic surgery, associating very frequently the excision with esthetic remodeling in the same time. This type of surgery allowed the extension of the indications for conservative treatment for tumors larger than 3 cm. In the same decade, the indications for immediate reconstruction have extended, especially thanks to the evolution of SSM: skin sparing mastectomy techniques. In the same time, the reconstitution techniques have been modified for the benefit of autologous reconstruction using the perforating flaps. The term oncoplastic surgery was coined to describe an evolving area of breast surgery that applies the principles of surgical oncology and plastic and reconstructive surgery to the management of women with breast cancer. Oncoplastic surgery does not describe a particular surgical procedure; it represents a comprehensive approach to surgical planning intended to achieve 1) widened surgical margins; 2) reduced local recurrence risk; 3) optimized cosmetic outcome; and 4) breast volume reduction when patients with macromastia develop breast cancer. In this context the term "local" tissue means layer of the origin texture within the breast or adjacent to the tumor bed in terms of displacement flaps. In contrast "remote" tissue provides similar texture from distant donor sites used for replacement. With regard to the treatment protocol adjacent tissue to the tumor bed requires radiotherapy treatment after breast conserving surgery. In contrast, distant tissue is considered healthy and does not necessarily need radiation, but when used in case of immediate partial reconstruction for volume or skin replacement, it must tolerate the adjuvant radiotherapy treatment according to the protocol..

**C04**

*Omar OMAR*

*Egypt*

## **Management of Paget's Disease**

About 1-4% of female breast carcinoma cases are associated with Paget disease of the nipple, the areola, and the surrounding skin; nearly 100% of mammary Paget disease cases are associated with an underlying carcinoma, either in situ (intraductal, 10%) or infiltrating cancer (90%). Occasional cases of Paget disease have been reported in ectopic breast or supernumerary nipples. Mammary Paget disease occurs almost exclusively in women. Involvement of the male breast is rarely reported. Patients with Paget disease frequently present with a chronic, eczematous rash on the nipple and adjacent areolar skin. Proper recognition of this disorder is required to initiate an appropriate workup (eg, skin biopsy) for differentiating it from other benign inflammatory dermatosis and for detecting an underlying breast carcinoma. CK7 has been proposed as a specific and nearly 100% sensitive marker for mammary Paget disease. One half (50%) of patients with Paget disease presenting with a palpable breast mass have associated axillary lymph node metastasis. Two thirds of patients with axillary node metastasis were reported to have a palpable breast mass, whereas one third of patients with axillary metastasis did not have a palpable mass. Even in patients with mammary Paget disease and no underlying tumor, 30% may develop an invasive carcinoma at a later date, and 20% of patients already have an associated in situ carcinoma of the breast. However, other reports indicate that no axillary metastases were detected in patients without a palpable breast mass. Survival is related to the presence or the absence of a palpable breast tumor. When present, the prognosis is the poorest. The reported survival rate of patients with Paget disease without a palpable breast tumor (prior to surgery) ranges from 92-94% at 5 years and from 82-91% at 10 years.



**C03**

*Elie NASR*

*Lebanon*

## **Radiation Therapy of DCIS**

The incidence of ductal carcinoma in situ (DCIS) of the breast is rising. This finding has led to the possibility of further breast conservation. We review in this course the role of radiotherapy in the context of breast conservation.

Non randomized studies showed a poor local control with conservative surgery alone, with local recurrences varying between 20 and 40% at 10 years. The use of radiotherapy led to a significant decrease in local relapse thus giving the rationale for phase III trials evaluating the role of radiotherapy.

To date there are four trials published dealing with radiotherapy for DCIS: EORTC 10853, NSABP B-17, SweDCIS and UKCCCR. All these studies showed a significant decrease in the local relapse to values around 15% at 10 years. This benefit did not however translate into any survival gain. The effect of radiotherapy was seen in all patients sub-groups. Controversies about the necessity of irradiating all patients and about the dose of the radiation to deliver remain present.

**Conclusion:** Conservative surgery followed by radiotherapy to the whole breast to a dose of 50 Gy remains the standard for breast DCIS.

**C09**

***Bishara ATTIYEH***

***Lebanon***

## **Flaps of Breast Reconstruction**

Breast reconstruction may be performed with prosthetic implants, autologous tissues (pedicled or free), or a combination of both. To minimize complications associated with implant reconstructions, prosthetic coverage with dermal regeneration templates has been advocated. And as described lately, breast reconstruction can also be achieved with fat injection with or without external expansion (BRAVA) and with or without stem cells enrichment, though this modality is still controversial. Reconstruction may also be achieved with absorbable fillers (Macrolane).

Although recent trends in breast reconstruction have shifted from implants to autologous tissues, the majority of patients still undergo an implant-based breast reconstruction. As more skin sparing mastectomies are being performed, immediate breast reconstruction with a prosthetic implant is proving to be a more convenient, quick, safe, and reasonable reconstructive option with adequate aesthetic results; however, breast reconstruction with autologous flaps remains indicated whenever wide skin excision is oncologically necessary, or in cases of delayed reconstruction to avoid the skin expansion step, or specifically whenever radiotherapy has been administered.

This presentation is a review of all described flaps for breast reconstruction. A recently developed dermal barrier flap technique with immediate prosthetic breast reconstruction in association with skin sparing/skin reducing mastectomy is also described.

**B11**

**Georges El KEHDY**

**Lebanon**

## **Hormone Replacement and Cancer**

Data suggest that sex steroids are involved in the development of breast cancer. Estrogens are not known to produce damage in DNA, but they can stimulate cell proliferation. The majority of risk factors for breast cancer relate to the duration of exposure of a woman to endogenous or exogenous estrogens. Progestins are also mitogenic on breast tissues. They enhance cell proliferation which increases both promotion and initiation of breast cancer.

Premenopausal women using oral contraceptives for more than ten years increase their relative risk (RR) of breast cancer by 10%. In post-menopausal women, most epidemiologic studies have demonstrated an increased RR in long-term (defined usually as more than five years) users of Hormone Replacement Therapy (HRT). Observational studies found RR ranging from 1.20 to 1.40. The increment in RR among Estrogen Replacement Therapy (ERT) alone is 1.023 per year of use. The largest randomized trial to date (WHI) reported a RR of 1.26 in HRT users, but a hazard ratio (HR) of 0.77 in ERT users.

WHI suggests that risk reduction occurs predominantly in ductal and localized cancers, whereas the Million Women Study (MWS) suggests that the previously reported association of HRT with breast cancer is mainly for tumors with lobular or tubular histology; the risk of ductal cancer is also increased, but to a lesser degree. No data exist on HRT in BrCa1 and BrCa2 carriers.

**A22**

**Maguy CHERFAN ABOU  
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**Fat Necrosis**

Fat necrosis is a breast lesion resulting from trauma or previous surgery or radiotherapy.

Clinical presentation can mimic carcinoma.

The gross appearance varies from indurated fat to cystic lesion.

The microscopic appearance is typical with inflammation, fibrosis, lipid granulomas and peripheral metaplastic changes

**B06**

**Negib GEAHCHAN**

**Lebanon**

## **Subcutaneous Mastectomy**

Subcutaneous mastectomy is an ablative operation of the breast that has been used for many decades since the middle of the twentieth century. It was indicated in patients suffering from debilitating benign diseases of the breast, mainly the fibrocystic breast disease.

In 1991, Toth described a new operating technique, called the skin sparing mastectomy. It consists in the removal of the whole mammary gland, including the nipple-areola complex, while preserving largely the skin covering the breast. The Toth's operation was proposed for cases of breast cancer not involving the skin. Later on, this technique was modified to spare also the nipple-areola complex and was called the Total Skin Sparing Mastectomy (TSSM).

The main difference between a subcutaneous mastectomy and a TSSM is the thickness of the subdermal tissue beneath the areola and the nipple. In the TSSM, no glandular or ductal tissue is left, and the thickness of the flap should not exceed 2 mm. Consequently, TSSM is the operation of choice for diseases of the breast where complete removal of all breast tissue is needed for cure.

Classical subcutaneous mastectomy is indicated in benign diseases of the breast where patients are choosing surgery for relief from debilitating symptoms (Fibrocystic disease).

TSSM is now proposed for multiple clinical and pathological conditions: prophylactic surgery (BRCA mutation carriers, strong familial predisposition, contralateral prophylaxis), preinvasive diseases (ductal carcinoma in situ, lobular carcinoma in situ etc...), and early breast cancer not involving the skin and the nipple areola complex. Recent publications report the use of this technique in more advanced cases of breast cancer, where the involvement of the nipple areola complex is excluded either by preoperative MRI or by frozen sections.

Subcutaneous and TSSM are followed immediately by breast reconstructions, using autologous flaps, or prosthesis. The latissimus dorsi flap and the TRAM flap are the most frequently used techniques, and gives the most satisfactory results on cosmetic basis. The introduction of expandable prosthesis has ameliorated the cosmetic results of the prosthesis use and reduced the complications rate. The complications of

subcutaneous mastectomy and TSSM include necrosis of the skin and the nipple areola complex, healing delays, infection, prosthesis loss, prosthesis encapsulation and non satisfaction of the patient. The occurrence and the recurrence rate of cancer is not particularly worrying since it approaches those encountered in total and partial mastectomies for cancer.

**A08**

**Adnan MROUEH**

**Lebanon**

## The Physiology of Lactation

Prolactin is secreted solely by the lactotroph cells of the pituitary gland. As a result, hyperprolactinemia results almost exclusively from diseases that cause hypersecretion of prolactin by lactotroph cells. Some of these causes are physiologic and others pathologic.

**PHYSIOLOGIC CAUSES** — Serum prolactin concentrations normally increase substantially during pregnancy and to a lesser degree in response to nipple stimulation and stress. The upper normal value for serum prolactin in most laboratories is 20 ng/mL (20 mcg/L SI units).

**Pregnancy** — Serum prolactin increases throughout pregnancy, reaching a peak at delivery. The magnitude of the increase, however, is quite variable; in one study the mean value at term was 207 ng/mL, but the range was from 35 to 600 ng/mL (35 to 600 mcg/L SI units). The probable cause of the hyperprolactinemia is the increasing serum [estradiol](#) concentrations during pregnancy. By six weeks after delivery, estradiol secretion has decreased and the basal serum prolactin concentration is usually normal even when the mother is breastfeeding.

**Nipple stimulation** — Nipple stimulation increases serum prolactin concentrations, presumably via a neural pathway. The magnitude of the increase is directly proportional to the degree of preexisting lactotroph hyperplasia due to estrogen.

**Stress** — Stress of any kind, physical or psychologic, can cause an increase in the serum prolactin concentration. As with all stimuli of prolactin secretion, women have greater increases than men, presumably due to the effect of their higher serum [estradiol](#) concentrations on the lactotroph cells. The magnitude of the increase in prolactin in response to stress is small, the values rarely exceeding 40 ng/mL (40 mcg/L SI units).

**PATHOLOGIC CAUSES** — Pathologic hyperprolactinemia can be caused by the following: • Lactotroph adenomas (prolactinomas), which are benign tumors of the lactotroph cell, decreased dopaminergic inhibition of prolactin secretion, and decreased clearance of prolactin.

**Decreased dopaminergic inhibition of prolactin secretion** — Several conditions interfere with normal [dopamine](#) inhibition of prolactin secretion. These include damage

to the dopaminergic neurons of the hypothalamus, pituitary stalk section, or drugs that block dopamine receptors on lactotroph cells.

**Hypothalamic and pituitary disease** — Any disease in or near the hypothalamus or pituitary that interferes with the secretion of [dopamine](#) or its delivery to the hypothalamus can cause hyperprolactinemia . These include: tumors of the hypothalamus, both benign and malignant ,Infiltrative diseases of the hypothalamus (eg, sarcoidosis) , Section of the hypothalamic-pituitary stalk (eg, due to head trauma) and adenomas of the pituitary other than lactotroph adenomas .

**Drug use** — A number of drugs may cause hyperprolactinemia . Several drugs are known [dopamine](#) D2 receptor antagonists, and raise serum prolactin by that mechanism.



**A01**

***Siham FLEYFEL***

***Lebanon***

**Embriology**

- At week 4, paired ectodermal thickening: the milk line or mammary ridge extending from the arm pit to the groin on both sides. Most disappearing except in the pectoral region.

- At week 7, a central depression from which 16 to 24 buds are produced that canalize at week 32.

- At week 12, specialized cells are transformed into smooth muscle of the nipple and the areola.- At birth, male and female breast are identical.

- At puberty, estrogen induce a new development of the mammary ducts and the deposition of fat.

Congenital anomalies:

- Excess or absence of mammary gland.

- Accessory breast tissue.

- Inverted nipple.

**B01**

**Saad KHAIRALLAH**

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## **Classification of Precancerous Diseases**

Les lésions pré- cancéreuses du sein se réduisent aux lésions prolifératives épithéliales intra-canalaire et intra lobulaires dont le diagnostic est devenu plus aisé et plus fréquent suite au développement important des moyens d'exploration non invasifs tel que le IRM mammaire , les échographies et la radiologie, et invasifs tel que les biopsies et biopsies exereses guidées (tru cut, mammotomes ...)

La classification de ces lésions reste basée sur des données morphologiques : les papillomes, les hyperplasie typiques lobulaire et intra-canalaire et les hyperplasies atypiques lobulaires et intra-canalaire . Des chevauchements, un risque variable d'évolution vers la malignité selon les lésions, et des frontières floues entre la bénignité et la malignité au niveau des ces lésions rendent cette classification assez ardue.

# Breast Physiological Considerations

**A11**

*Georges HILAL*

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**Biochemical and Hormonal Pathways in  
the control of mammary Development**

Human breast development is a progressive process that is initiated during embryonic life. It continues after birth through the exposition of the newborn to different endogenous and exogenous maternal hormones secreted in the milk. During the first few months of postnatal life, the hypothalamic-pituitary-gonadal axis is transiently activated until girl reaches puberty. Although puberty marks the beginning of glandular maturation, the full breast differentiation is attained only with subsequent pregnancy and lactation. Normal ductal development requires both estrogen and progesterone and local growth factors and hormones like IGF-1 (insulin-like growth factor). Progesterone acts in conjunction with estrogen to regulate breast development through its specific receptor on breast epithelial cells (breast lobules types 1 -3). During pregnancy and lactation period, the development of type 4 of lobules is under the control of chorionic gonadotropin and a complex interaction between ovarian, placental and pituitary hormones. On a more local level of control, normal breast cells that are stimulated by circulating hormones trigger additional hormones –like substances that act as paracrine, juxtacrine and autocrine molecules. This include, epidermal growth factor (EGF), Transforming Growth Factor beta (TGF- $\beta$ ), Fibroblast stimulating factor (FSF), colony stimulating factor (CSF), hepatocyte growth factor (HGF)..... Each of these stimulating molecules act through its own signaling pathway and play a crucial role in the development of a specific aspect and part of the normal breast at different stages.