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SYMPOSIUM

Non palpable breast lesions

2 INVITED

Mammographic-pathologic correlations

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Microcalcifications: Just about 5% of the mammographical bydetected microcalcifications (MC) are associated with cancer, usually with intraductal cancer. The differentiation between "benign" and "malignant" MC is highly important to avoid unnecessary surgical biopsies. On the basis of the anatomic structure of their origin, we distinguish ductal- and lobular-type MC. Practically in all cases, the ductal- type linear or branching MC is associated with a malignant process, usually the comedo-type, poorly differentiated ductal carcinoma in situ (DCIS), the mammographic interpretation of which is straightforward. The lobular-type fine granular MC may be associated with both malignant or benign processes. The malignant process is usually the non-comedo, well-differentiated (cribriform/micropapillary/clinging) DCIS.The benign process is usually some type of fibrocystic "disease", often with atypical ductal hyperplasia.

The mammographic interpretation of the lobular type MC is rather difficult. Certain guidelines may help in the distinction between a benign and a malignant process. Multiple clusters (3 or more) are usually associated with DCIS.

Comedo and non-comedo intraductal carcinomas differ in anatomic distribution, mammographic detectability and biological behaviour. These differences should be considered in making a therapeutic decision. Comedo DCIS has a high malignant potential in terms of the chance for developing into an invasive process, in contrast to the non-comedo DCIS which has a low malignant potential.

Invasive cancers: Approximately 10% of all breast cancers can be detected in their intraductal (in situ, non invasive) phase. That is, 90% are detected when they have already become invasive. The reason for this is the fact, that only a part of DCIS is associated with mammographically detectable microcalcifications.

Invasive cancers can be devided in two groups based on their biological behaviour : special types (about 30%) and non-special, or common types (70%). Special types, such as lobular invasive, tubular, mucinous and medullary carcinomas have a relatively good prognosis compared to the common types. They also have rather typical mammographic and histopathologic features.

The non-special type invasive ductal carcinomas constitute the majority of invasive breast cancers. They have a poorer prognosis, that is, a higher metastatic potential than special type invasive carcinomas. They lack special mammographic and histologic features and show up usually as poorly outlined densities on the mammogram. Because of their high metastatic potential, the early detection of invasive ductal cancers (detection in their premetastatic state) has a greater impact on mortality than the special type invasive carcinomas.

3 INVITED

Breast conservation therapy – techniques & controversies

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Breast-conserving surgery together with axiliary dissection and radiation therapy is now considered the preferred treatment for the majority of patients with small breast cancers. The application of mammographic screening programmes increases the detection rate of such small tumours. It is now accepted that more than 70% of breast cancers should have a pre-operative diagnosis made by cytology or core biopsy histology. All patients with breast cancer should have pre-operative mammography. The surgeon ensures that the lesion has been excised completely. Segmental breast resections require to be oriented appropriated and histological assessment of the margins of the excised specimen is routine. Re-excision is sometimes needed to ensure that the margins are clear of disease.

Complete axillary dissection has been the only method of evaluating axillary lymph nodes with complete accuracy although the use of sentinel node technology represents a promising development for allowing patient selection for complete axillary clearance.

Controversies in breast-conserving surgery relate to (1) the margin of clearance between tumour and resected edge of the specimen, (2) the relative value of cytology versus histology in planning definitive treatment, (3) the place of axillary dissection in small tumours, (4) the role of sentinel node identification in planning axillary surgery, (5) definitions of situations where breast conservation is inappropriate.

4 INVITED

Fine needle aspiration cytology (FNAC) vs core biopsy

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Needle biopsies of breast lesions are today considered as an important alternative to surgical diagnostic biopsies. Fine needle aspiration cytology (FNAC), where single or clustered cells are sampled through thin needles (22–25 G), have been used during the last 50 years. Mostly due to lack of cytopathologists, core biopsies (14–18 G), where small pieces of tissue are sampled from the lesions for histopathologic evaluation, have been increasingly used during the last 10 years. Both methods can be used after guidance by palpation, stereotaxic imaging or ultrasound. However, there are important differences between FNAC- and core biopsy technique. The differences are not only concerning the diameter of the needles and the way of using them, but also for example concerning the need for local anaesthesia, the possibilities of immediate morphological diagnosis, the diagnostic accuracy in relation to the experience of the pathologist as well as the experience of the doctor performing the procedure, and the costs.

Which method are we going to use in the future? The answer depends upon the local conditions, for example on which method the pathologists are familiar with and prefer, and also on the experience of the doctor doing the procedure. Both methods are most probably going to be used. The important message to remember is that, whatever technique we prefer, FNAC or core biopsy, our goal will be the same.

Our goal is to improve diagnosis of both palpable and non-palpable lesions and achieve a correct diagnosis of the tumour without surgical diagnostic biopsy. When we add morphology, FNAC or core biopsy, to palpation and breast imaging, we can: 1) avoid diagnostic surgical biopsies of malignant tumours because we can achieve a conclusive morphological diagnosis of malignancy before surgery and surgery can thus be planned as a curative measure at once 2) avoid unnecessary surgical biopsies of benign lesions 3) avoid follow-up mammograms 4) reduce patient anxiety 5) reduce the costs for the health care system.

5 INVITED

Quality assurance in surgical management

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Accurate pre-operative diagnosis of non-palpable breast lesions is critically dependant on the quality of the multi-disciplinary team of radiologist, surgeon and pathologist. In the UK screening programme quality standards for each of these disciplines is laid down and audited formally. A centrally funded quality assurance manager is attached to each screening centre and a national committee for each discipline meets regularly.

Data such as detection rates, often benign biopsy notes and proportion of DCIS to invasive cancer are generated for each unit and considered nationally. Units with poor performance are subject to external review and this has resulted in the suspension of at least one unit recently. However, the UK Health Department are about to initiate regular external peer review for all units in order to further drive up the standards, as the success of screening is critically dependent on the quality of the process.