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Breast Pathology 2017: Why the term of low-grade ductal carcinoma *in-situ* should be changed to borderline breast disease: Diagnostic and clinical implications- Shahla Masood- University of Florida College of Medicine

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Last several years public awareness have increased most advances in breast imaging and enhanced screening programs have led to early breast cancer detection and attention to cancer prevention. The numbers of image-detected biopsies have increased and pathologists are expected to provide more information with smaller tissue samples. These biopsies have mostly resulted in detection of increasing numbers and of high-risk proliferative breast disease and *in situ* cancers. This are overall hypothesis is that some forms of breast cancers may arise from established forms of ductal carcinoma *in situ* (DCIS) and atypical ductal hyperplasia (ADH) and possibly from more common forms of ductal hyperplasia. However, this is an over simplification of a very complex process, given the fact that the majority of breast cancers appears to arise de-novo or from a yet unknown precursor lesion. ADH and DCIS are reflected as morphologic risk factors and precursor lesions for breast cancer. Though, morphologic distinction between these two entities has remained a real issue that continues to lead to over diagnosis and overtreatment.

Aside from morphologic resemblances between ADH and low grade DCIS, biomarker studies and molecular genetic testing's that have shown morphologic overlaps are reflected at the molecular levels and raise questions about the validity of separating these two entities. It is mostly hoped we can have better understand by the genetic basis of these entities in relation to ultimate patient outcome, the suggested use of the term of borderline breast disease can be minimized and the number of patients who are subject to overtreatment. Resolve of the prevalence, of the radiological and clinical features, and outcome of atypical hyperplasia (AH) of the breast within a population subjected to routine screening it can be double-view mammography with double reading, and easily performed every two years between 50 and 75 years of age. Widespread routine screening for breast cancer combined with the development of imaging techniques [ultrasound, mammography and magnetic resonance imaging (MRI)] and percutaneous biopsies has increased diagnosis of atypical hyperplastic breast lesions. Accounting for just 3.6% of cases in 1985.

Patients and Methods:
Clinical and radiological records and histological results of percutaneous and surgical biopsy specimens of sixty-eight patients presenting with AH were reviewed together with patient follow-up data after percutaneous and surgical biopsy. Results: AH incidence in the population was 0.19‰ with the following distribution of lesions: atypical epithelial hyperplasia (AEH, 53%), columnar cell metaplasia with atypia (CCMA, 32%), and lobular intraepithelial neoplasia (LIN, 8%). The mean patient age was 58 years and 24% of patients were receiving hormone replacement therapy. The radiological finding are the presence of micro calcifications for AEH and CCMA lesions in more particular, and the mammograms were valid. Total Number of 13.7% of AH cases were underestimated by a real risk of AH progression was observed, and regardless of whether they are or not surgical biopsy have been performed.

Conclusion: The clinical and radiological characteristics of AH observed in a population subjected to routine breast cancer screening are identical to those for patients with the same lesions referred to specialist centres. Surgical biopsy remains more recommended due to the risk of underestimation of lesions by percutaneous biopsy and the risk of progression justifies the need for continued close monitoring. These lesions raise issues that are left unresolved their clinical significance remains controversial. They are either linked to risk for breast cancer or considered a true precancerous condition. This can be detected biopsies has led to increased diagnosis of ductal carcinoma *in situ* and high-risk proliferative breast lesions. This progress, however, has created a challenge for pathologists. In lieu of the fact that these entities are difficult to diagnose even in tissue sections taken from surgically excised lesions Breast cancer remains a global public health problem and is currently the most polarized cancer in the world.

Attention to this disease, public awareness, and advances in breast imaging have made a positive impact on breast cancer screening and detection In addition, some of proliferative lesions are associated with an increased risk of finding neighbouring when diagnosed on minimally invasive procedures. Therefore, classifying these lesions in small biopsies is difficult and risky. Most of the challenging areas in diagnostic pathology include the differentiation between atypical ductal hyperplasia and low-grade ductal carcinoma *in situ*, lobular neoplasia versus solid low-grade ductal carcinoma *in situ*, the correct interpretation of papillary lesions with atypia, and classifying the spectrum of columnar cell changes.

Although these are the issues which have been recognized for years, the consensus criteria and uniform terminology for the diagnosis of these problematic lesions that are far from being

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achieved. The purpose of this study is to review these borderline lesions in an effort that which clarify some criteria and prompt that can be mostly needed discussion for consensus. The first step towards developing a personalized management strategy for calcifications is to have a very accurate assessment of the likelihood of malignancy for specific imaging descriptors, since calcification morphology is likely to be the greatest predictor of disease. However the available evidence, as referenced in the BI-RADS Atlas, is drawn from studies that are limited by the use of old screen film technique, smaller sample sizes, single reader assessment of morphology, or selection bias.