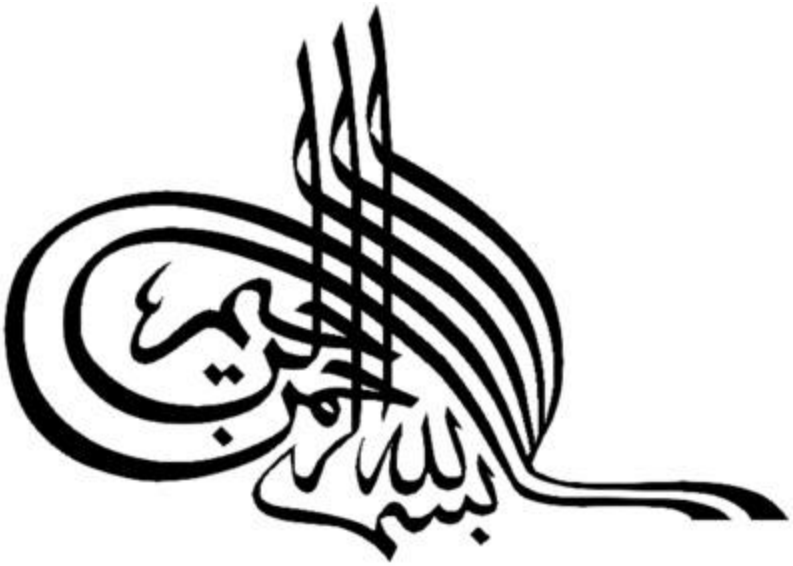

يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ

(المجادلة: 11)

Dedication

I dedicate this research to my

Loving mother & father for …..…

their warm love ,care and support.

Husbandfor ... …

his continuce encouragement and providing agood enviroment through

our life.

Children … …

Belovled brothers & sisters.… …

Friends and colleagues.… …

With love and hon

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There is no suitable word that I can express my feeling to my big family and small family for their continuous support.

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Abstract

Breast Fibroadenoma is a hormone-dependent neoplasm of early reproductive life that lactates during pregnancy and involutes along with the rest of the breast in per menopause. The peak incidence is between the ages of 15 and 35 years . Image texture is a function of the spatial variation of pixel intensities in an image .Image texture analysis can provide quantitative information in the form of texture features that is not visible to human vision.The general objective of this study was to characterize breast Fibroadenoma in U/S image by using texture analysis in order differentiate between the different tissue morphology of breast lesions. This study was done to determine the ultrasonography characteristics in breast (Fibroadenoma ,cyst) versus normal fibroglandular breast tissue . It is carried out in Saad Specialist hospital K.S.A , in patient with breast lesions that referred to radiology department in the period from January 2014 to May 2016. A total of 130 patients were included in this study. US result showed, 41% with regular outline indicate the benignancy of disease, 30.7% with normal result and more than 95% with breast feeding, 46.5% form all women having hypoechoic lesion, with homogenous echotexture in 54.4% of the patient, no calcification seen, 65% avascular and prevascularity was noted in 0.9% of lesion mostly near the vascularity of breast. UOQ commonly affected in both breast, Linear discriminant analysis was used for the tissue classification. The study found that the Fibroadenoma texture reveal a different underlying pattern compared to the cyst and normal breast tissues with classification sensitivity and specificity 100% and 92.5% respectively for Fibroadenoma, and the combination of the texture features throughout the different U/S image phases provide the highest predictive overall accuracy of 95% using linear discriminant analysis technique.

المستخلص

الورم الليفي بالثدي من الاورام الحميدة التي ترتبط بالهرمون في بداية عمر الإنجاب واثناء فترة الحمل وسن الياس في العمر بين سنة 15-35 .التحليل النسيجي للصورة يعطي المعلومات الكمية والخصائص التي لا تري بالعين المجردة .الهدف الاساسي من هذه الدراسة هو توصيف الورم الليفي للثدي وقياس مدي الاختلاف بين العناصر الدقيقة في الصورة باستخدام الموجات فوق الصوتية و تقنية التحليل النسيجي للتفريق بين انسجة الثدي الطبيعي وانسجة الورم الليفي والتكيسات وقد اجرى فحص الموجات فوق الصوتية باستخدام مسبار خطي مع تردد 10ميقاهيرتز. .أجريت هذه الدراسة لتحديد خصائص الموجات فوق الصوتية في اورام الثدي الحميدة (التكيسات والاورام الليفية) مقابل وضع انسجة الثدي الطبيعي. طبقت هذه الدراسة في مستشفى سعد التخصصي بالمملكة العربية السعودية ، في المرضى المحولين الي قسم الاشعة والموجات فوق الصوتية في الفترة من اغسطس 2013 إلى يوليو 2016. في هذه الدراسة تم دراسة مجموع 130 مريضة وكانت النتائج كالاتي نسبة 41% من الاورام كانت منتظمة الحدود التي هي مؤشر للورم الحميد ,30.7% نتيجة طبيعية واكثر من 95% رضاعة طبيعية , 46.5% من النساء ذات ورم ليفي , 54.4% منتظمة صدي النسيج,لا توجد تكلسات ,65% خالية من الاوعية دموية بينما 0.09% فقط توجد بها اوعية دموية خارجية , توجد هذه الاورام الليفية في الجزء العلوي الخارجي للثدي بشقيه الايمن والايسر . لتصنيف الانسجة ووجد ان انسجة الورم الليفي تختلف عن انسجة التكيسات تختلف عن انسجة الثدي العادية بحساسية ونوعية 100% و92.5% علي التوالي ,66 تكامل خصائص الانسجة عن طريق صور الموجات فوق الصوتية المختلفة عالية الدقة 95% عن طريق استخدام تقنية التحليل التفريقي الخطي .

List of abbreviation

Abbreviation	Phrase
U/S	Ultra-Sound
DCIS	Ductal carcinoma in situ
LCIS	Lobular carcinoma in situ
NPV	Negative predictive value
ILC	Invasive lobular carcinoma
RUOQ	Right upper outer Quadrant
RUIQ	Right upper inner Quadrant
RLOQ	Right lower outer Quadrant
RLIQ	Right lower inner Quadrant
LUOQ	Left upper outer Quadrant
LUIQ	Left upper inner Quadrant
LLOQ	Left lower outer Quadrant
LLIQ	Left lower inner Quadrant
RS	Radial scar
SD	Standard deviation
FNA	Fine-needle aspiration
LN	Lymph node
MRI	Magnet resonance imaging
PEM	Positron emission mammography
PPV	Positive predicted value
CR	Computed radiography
SPEM	Single Photon Emission Mammography
PND	Pathologic Nipple Discharge
THI	Tissue Harmonic Imaging
FOV	Field of view
MRM	Magnetic resonance mammography
CAD	Computer-aided diagnosis/detection
GLCM	Gray level co-occurrence matrix
I D L	Interactive Data Language
DICOM	Digital imaging and Communication
TDLU	Terminal Lactiferous Ducts drain the milk from
FCCs	Fibrocystic changes
IBUS	International Breast Ultrasonic Examination Guidelines.
ROI	Region of interest
FOS	First order Statistical Textures Texture Analysis
SW-LDA	Step wise linear discriminate analysis
ANDIs	Aberrations of normal development and involution
FCCs	Fibrocystic changes
GLDS	Grey Level Difference Statistics Features
SGLD	Spatial Grey Level Dependence

PCBP	Phased Congruency-based Binary Pattern
PC	phase congruency
LBP	local binary pattern
BI-RADS	Breast Imaging Reporting and Data System

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