



**CORRELATIVE STUDY BETWEEN ULTRASOUND
AND MRI IN EVALUATION OF POST OPERATIVE
FINDINGS FOLLOWING SURGICAL MANAGEMENT
OF MALIGNANT BREAST LESIONS**

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

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List of Abbreviations

CBS	: Conservative breast surgery
DCIS	: Ductal carcinoma in situ
DWI	: Diffusion Weighted Imaging
HER2	: Human epidermal growth factor receptor 2
IDC	: Invasive Ductal Carcinoma
ILC	: Invasive Lobular Carcinoma
LCIS	: Lobular carcinoma in situ
MPR	: Multi-planar reconstruction
MR	: Magnetic resonance
MRI	: Magnetic resonance image
NAC	: Nipple-areola complex
NMLE	: Non-mass like enhancement
NSM	: Nipple sparing mastectomy
ROI	: Region of interest
SSM	: Skin sparing mastectomy
US	: Ultrasonography

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Introduction

Breast cancer is the most common type of cancer and it is responsible for the highest mortality in women worldwide. The incidence of the disease is higher in developed countries (*Yili and Xiaoyan, 2009*).

After surgical treatment for breast cancer it is an important to evaluate patients by various international guidelines includes mammogram, ultrasound and MRI (*Burstein, 2010*).

The purpose of follow up of breast cancer patients is recognition of recurrence or new primary cancer and assessment of complications of therapy (*Emens and Davidson, 2013*).

Technological improvements in the field of medical imaging including mammography, ultrasound and MRI have markedly enhanced the accuracy for post operative breast cancer diagnosis (*Jellins, 2009*).

Most experts recommend that women who have had breast surgery get a mammogram of the treated breast 6 months after surgery because changes in the skin and breast tissues that will show up on the mammogram, making it harder to read. The changes usually show up best about 6 months, and the mammogram done at this time

serves as a new baseline for the affected breast. Future mammograms will be compared with this one. On mammography, the appearance of recurrent breast cancers are generally thought to be mammographically similar to the original breast tumor (**Houssami and Ciatt, 2013**).

US detects ipsilateral recurrent or contralateral metachronous breast cancers with higher sensitivity than that of palpation or mammography. (**Rissanen, 2003**).

Ultrasound is an excellent modality to evaluate chest wall and axillary areas, which cannot be easily approached by mammography (**Kim and Park, 2004**).

Early detection of a loco regional recurrence of breast cancer after primary treatment by US can help guide patient management by sorting out those who may benefit by early therapeutic intervention or curative treatment of local disease. MRI helps to identify tumors in the breast that may have been missed by a mammogram, MRI can detect focal and non focal lesions.

DWI which is less affected by the state of the background mammary gland, has sufficient capability to diagnose residue and recurrences with limits exist in spatial resolution and problems with ADC. DWI is expected to play an important role in future breast cancer diagnosis (**Law and Cheung, 2013**).