

# Ultrasound Findings in Patients with Mastalgia

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## ABSTRACT

**Objective** To determine the frequency of different ultrasound findings in patients presenting with mastalgia.

**Study design** Cross sectional study.

**Place & Duration of study** Department of Surgery, Dow University Hospital Karachi, from January 2016 to June 2016.

**Methodology** This study included female patients of any marital status and parity who presented to surgical OPD of Dow University Hospital with the complaints of breast pain for more than one month duration. All patients were advised ultrasound breast after history and examination. The ultrasound findings were recorded on a performa.

**Results** A total of 70 female patients, aged 15-60 year, were included. Mean age of the patients was 30.07 year. Mean duration of breast pain was 5.3 months. Ultrasonographic imaging findings showed fibroadenoma in 22 (31.4%), a simple cyst in 18 (14.3%), malignancy in 1 (1.4%) and 6 (8.6%) patients had duct ectasia. Mastitis was shown in 3 (4.3%) and 1 (1.4%) had abscess on ultrasound. Other patients (n=27 - 38.6%) had completely normal breast on ultrasound, among them 81.5% had cyclic and 18.5% noncyclic breast pain.

Out of 22 (31.4%) patients in whom ultrasound reported fibroadenoma; in 18 (81.8%) there was a single lump while remaining 4 (18%) had multiple lumps in single or both breasts. Ten patients had a cystic lesion reported on ultrasound, out of which 7 had 2 or more cysts while 3 had a single cyst.

**Conclusions** Patients presenting with mastalgia may have different pathologies. Ultrasound helps to determine the exact cause so that appropriate treatment for the cause of breast pain can be provided.

**Key words** Ultrasound breast, Mastalgia, Breast pathology.

## INTRODUCTION:

Mastalgia remains an under-reported and poorly recognized condition but is the most frequent reason for breast consultations in general practice.<sup>1</sup> Between 50% to 80% of women are estimated to have experienced mastalgia at some point in their life.<sup>2</sup>

Mastalgia can be so severe as to affect the usual daily activities, including the professional, social, sexual and family life. Many studies mentioned the effectiveness of imaging along with precise clinical examination in evaluation of patients with mastalgia and in excluding cancer.<sup>3-8</sup>

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A study done in Turkey concluded that if result of clinical examination is normal and patient is of age 30 year or below and there is no significant family history, imaging is not necessary. Medical therapy can be started directly after the patient is informed.<sup>9</sup> It is known that mastalgia has multiple etiologies with different treatments which can be picked up with ultrasound.<sup>3,4,10,11</sup> Ultrasound is also useful to detect

malignant cases in younger females as mastalgia is one of the presentations of malignancy, although a rare one.

This study was designed to determine the frequency of different ultrasound findings in patients with mastalgia so that specific treatment can be started. There is also paucity of studies showing the etiology of mastalgia being assessed with the help of ultrasound.

**METHODOLOGY:**

This cross-sectional study was conducted at the Department of Surgery, Dow University Hospital Karachi, from January 2016 to June 2016. The sample size was calculated by using WHO sample size calculator taking 18.6% of prevalence and 9% chance of error, the sample size was 70.<sup>3</sup> All females presenting to OPD of with the complaint of breast pain were included after informed consent. Breast pain with assessed by visual analog score (VAS) of 1 – 10. Patients from 15-60 year of age, with any marital status, parity and duration of breast pain of more than one month duration, were enrolled. Pregnant women, those using hormonal therapy and previously diagnosed and treated cases of breast cancer, were excluded.

After taking history and performing breast examination, patients were advised ultrasound of breast. Findings of history, examination and ultrasound were recorded on a performa. All ultrasound were done in radiology Department of Dow University of Health Sciences. Data was analyzed by using SPSS version 20. Frequency and percentages were computed for categorical variables like ultrasound findings (normal, benign cyst, fibroadenoma, malignancy, duct ectasia, mastitis and abscess), type of mastalgia, parity, marital status, smoking status and drug addiction. Mean + SD were computed for quantitative variables like age and duration of pain.

**RESULTS:**

Mean age of the patients was 30,07 + 8.97 year and mean duration of breast pain was 5.34 + 4.69 months. Most of the patients were multiparous (n=38 + 54.3%). The ultrasound findings are given in table I. Fibroadenoma was noted in 22 (31.4%) patients (table II).

Out of 22 (31.4%) patients in whom ultrasound reported fibroadenoma; in 18 (81.8%) patients there was a single lump while remaining 4 (18%) had multiple lumps in single or both breasts. Ten patients had a cystic lesion reported on ultrasound, out of which seven had two or more cysts while three had

a single cyst. The addiction and smoking status of patients is shown in table III.

<b>Table I: Demographic data and Ultrasound Findings</b>	
<b>Variable</b>	<b>n (%)</b>
<b>Marital status</b>	
Single	14 (20)
Married	55 (78.6)
Separated	1 (1.4)
<b>Parity</b>	
Nulliparus (0)	15 (21.4)
Primiparus(1)	17 (24.3)
Multiparus (>2)	38 (54.3)
<b>Type of breast pain</b>	
Cyclic	36 (51.4)
Noncyclic	34 (48.6)
<b>Ultrasound findings</b>	
Normal	27 (38.6)
Benign cyst	10 (14.3)
Fibroadenoma	22 (31.4)
Malignancy	1 (1.4)
Duct ectasia	6 (8.6)
Mastitis	3 (4.3)
Abscess	1 (1.4)

**DISCUSSION:**

Breast pain is a common symptom in women affecting quality of life. Breast ultrasound is a good modality of imaging for evaluating breast diseases including breast pain. In our study only 38.6% patients with mastalgia had a normal ultrasound of breast and this finding is consistent with the study of Ja’afreh S et al that showed 38.1% patients had normal breast.<sup>13</sup> This finding was not found in other studies. Norma breast on ultrasound is reported from 29.9% to 77.3% in different studies.<sup>4,6,12</sup>

Reassurance, evening primrose oil, simple analgesics, advise about using appropriately fitting and supportive bra during day and soft bra at night and to avoid caffeine drinks, improved 90% patients having cyclic mastalgia with normal breast and 85% of patients having noncyclic mastalgia with normal breast. Second most frequent finding in our study was lump with benign looking features likely to be fibroadenoma in 31.4%. Fibroadenoma was in 23.5% of patients with breast pain in study of Olcucuoglu E et al,<sup>9</sup> and 28% in study of Naz N et al.<sup>4</sup> Patients having fibroedenoma >3cm were

Table II: Frequency of Cyclical and Noncyclical Breast Pain In Different Sonological Findings			
Category	n (%)	Category	n (%)
Normal ultrasound	27 (38.6)	Cyclical breast pain	22 (81.5)
		Non cyclical breast pain	5 (18.5)
Benign cystic lesion	10 (14.3)	Cyclical breast pain	0 (0)
		Non cyclical breast pain	10 (100)
Fibroadenoma	22 (31.4)	Cyclical breast pain	14 (63.6)
		Non cyclical breast pain	8 (36.3)
Duct ectasia	6 (8.6)	Cyclical breast pain	0 (0)
		Non cyclical breast pain	6 (100)

Table III: Smoking and Addiction Status in Patients with Normal Ultrasound			
Category	n (%)	Category	n (%)
Normal ultrasound and cyclical breast pain	22 (81.5)	Smoking	1 (4.5)
		Drug addiction	10 (45.4)
Normal ultrasound and non cyclical breast pain	5 (18.5)	Smoking	0 (0)
		Drug addiction	3 (60)

advised excision of fibroadenoma whereas those having <3cm size fibroadenoma or small multiple lumps were kept in follow up with three monthly clinical examination and given simple analgesics.

In our study benign cyst was found in 14.3% of patients, however it was 22.5% in study of Olcucuoglu E et al.<sup>9</sup> Seven patients having multiple cysts were given antibiotics and analgesics while three patients having single palpable cyst were advised aspiration of the cyst under ultrasound guidance that relieved breast pain. Our results showed malignancy in 1.4%, duct ectasia in 8.6%, mastitis in 4.3% and abscess in 1.4%. Finding of malignancy is consistent with the study of Naz N that showed 1.1% malignant lesions.<sup>4</sup> Ghebrehwet M et al showed 44.8% malignant lesions.<sup>12</sup> A study showed different results with 7.6% malignant, 20% mastitis and 14% duct ectasia.<sup>13</sup> Patients of malignancy were managed as per protocol after discussion in tumor board meeting. For patients of duct ectasia and mastitis, antibiotics, anti inflammatory and simple analgesics were advised that relieved their breast pain. For abscess, incision and draining was done.

Patients who needed surgical intervention included patients having malignancy (1.4%), abscess (1.4%), >3cm fibroadenoma (22.8%) and single benign cyst (4.28%). This emphasizes the importance of doing ultrasound in patients who present with breast pain

so that patients can be managed medically or surgically as appropriate.

**CONCLUSIONS:**

Patients presenting with mastalgia may have different pathologies. Ultrasound helped to determine the exact cause and facilitated devising treatment approach.

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Author's Contributions:

Noureen Shaukat: Designed study, data collection, statistical analysis, manuscript writing, editing and final approval of manuscript.  
Farhat Jaleel: Conceived and designed study, editing and final approval of manuscript.

Conflict of Interest:

The authors declare that they have no conflict of interest.

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