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Ghazala Mulla
BUMS, M.Phil Ayu, Department of Physiology, Z.V.M Unani Medical College and Hospital, Azam Campus, Camp, Pune, Maharashtra, India

Sufyan Ahmed Ghawte
Dept. of Ilajbit Tadbeed, Inamdar Unani Medical College and Hospital, Gulbarga, Karnataka, India

Prerna Raina
Interactive Research School for Health Affairs (IRSHA), Bharati Vidyapeeth (Deemed to be University), Katraj-Dhankawadi, Pune-Satara Road, Pune, Maharashtra, India

Ruchika Kaul-Ghanekar
Ph.D. Cancer Research Lab, Interactive Research School for Health Affairs (IRSHA), Bharati Vidyapeeth (Deemed to be University), Pune-Satara Road, Pune, Maharashtra, India

Correspondence
Ghazala Mulla
BUMS, M.Phil Ayu, Department of Physiology, Z.V.M Unani Medical College and Hospital, Azam Campus, Camp, Pune, Maharashtra, India

Treatment of recurrent breast abscess by cupping therapy and raw papaya paste dressing: A case report

Ghazala Mulla, Sufyan Ahmed Ghawte, Prerna Raina and Ruchika Kaul-Ghanekar

Abstract
A 38-year-old female patient was diagnosed with third episode of breast abscess that was evacuated and drained by cupping therapy, followed by application of raw papaya dressing. Unani medicines were prescribed during the course of the treatment for fifty days. It was observed that the wound healed up with no episode of recurrence of breast abscess. The breast abscess was successfully treated with Unani therapeutic approach.

Keywords: Breast abscess, cupping therapy, raw papaya paste dressing, Unani

1. Introduction
Breast abscesses are complications of infectious mastitis and generally occur in young women [1]. It is caused by bacteria, most often by *S. aureus* that enter through small skin lacerations and proliferate in the stagnant lactiferous ducts [2]. The first line of treatment involves antibiotics, followed by surgical incision and drainage [3]. However, these treatment options do not provide long term relief and often lead to recurrent breast abscesses [4]. This invites attention towards development of an effective approach for treatment of breast abscess.

Unani system of medicine (USM) is based on the drugs from plants, animals and mineral origin. A large number of formulations used in USM have been converted into modern formularies for the treatment of breast related disorders. In USM, abscess is called as Khuraj or Dubela having Khilt Ghaleez (Morbid matter) and Harkaifiyat (Hot characteristic) under the skin [5]. The causes of Khuraj are Imtela (congestion), Kasrat-e-Madda (excess matter) and Fasad-e-Madda (derangement of matter) which get entrapped under the skin or in any gland along the course of their circulation and become Khilt-e-Ghaliz (morbid matter) over a period of time [5]. The breast abscesses can be treated by three principles, which include Tanqiy-e-Mawad (evacuation of morbid matter), Hijamah Bil -Shurt (cupping), Tazmeed (by local application of the medicine) and Mujaffifat (by systemic use of Unani drugs having astringent properties) [5].

Based on these principles, the abscess was evacuated bycupping (negative pressure evacuation), followed by treatment ofthe wound with raw papaya dressing pack. The patient was further given Unanioral medicines such as Mefsil, Huma Jadeed, Syrup Live tone, Syrup Aijicid, Safoof Kishnizi, *Habbe Mussafi Khoon* from day one (first day of cupping) up to a period offifty days.

2. Case report
We report the case of a 38-year woman with history of recurrent right sided breast abscess. The patient had experienced first episode of breast abscess in August 2014. At that time, the abscess had been confirmed by ultrasonography (USG) of breast. Fine needle aspiration cytology (FNAC) of purulent material (2cc) aspirated from breast lump and histopathology of nodular bit of tissue (measuring 3×2 cm) confirmed non-malignancy. Further, culture examination and AFB (acid-fast bacilli) staining of specimen (pus) obtained from the abscess showed negative result for tuberculosis. The patient had under gone incision and drainage (I/D) of abscess in October 2014.In April 2015, the patient had experienced second episode of abscess (in the right breast) and underwent I/D again. In April 2016, the patient experienced third episode of abscess and then visited Unani clinic, Herbs and Hakim, located at M.G Road, Pune, Maharashtra, India and consulted Dr. Ghazala Mulla, a Unani physician.

The complete history along with consent was taken from the patient and the breast examination was carried out. The affected region was hard, red, tender and swollen. The abscess was not fully developed and so the patient was asked to make a round flat bread made from flour of split red lentil. The bread was asked to be warmed and place at the inflamed region of the right breast for 10 min twice a day till liquefaction of the abscess was felt by the patient. After 5 days, the breast abscess ruptured and pus oozed out. The pus from the abscess was drained off by cupping therapy that was continued upto8 days. The breast wound was treated with raw papaya dressing pack after each cupping session and continued till complete healing of the wound (one month). Oral Unani medicines (*Cap Mefsil*, twice a day; *Capsule Huma Jadeed*, twice a day; 10 ml *Syrup Live tone*, twice a day; 10 ml *Syrup Aijicid*, twice a day; 1 tea spoon *Safoof Kishnizi*, twice a day and 2 tablets of *Habbe Mussafi Khoon* every day) were given from the first day of treatment. The patient was observed weekly for 3 months and followed by three month follow-up visit for one year.

3. Results

During the first episode of breast abscess, USG examination (done at Vision Sonography & Colour Doppler Clinic, Rasta Peth, Pune= 411011) showed the presence of liquefied abscess (5.9 x 4.9 x 6.3 cm) in right breast of patient (Fig 1). The laboratory findings (Haemogram) of the patient have been shown in Table 1. The hemogram was done at Swayam Clinic and Nursing Home, Bhawani Peth, Pune by using automated Haematology Analyser, Nihon Kohden, Celltac Tokyo, Japan. The report was analyzed by Dr. Shirish Pophalikar, MBBS, MD, Pathology (Reg No.2002/01/0139).

One year after I/D, the patient experienced second episode of breast abscess and USG examination (done at Vision Sonography & Colour Doppler Clinic, Rasta Peth, Pune-411011) showed the presence of developing abscess (3.5x 2.4 x 2.7 cm) in breast withno liquefaction. No other abnormality was detected in USG (Fig 2). Histopathology examination of breast tissue showed dilated ducts and breast acini surrounded by fibrous tissue. The stroma showed dense infiltrations with chronic inflammatory exudates consisting of lymphocytes. Occasional lymphoid follicle formation was also observed. Focal collection of acute inflammatory and degenerative pus cells was found to form the abscess. Area of fat necrosis with lipocytes showed bluish, granular cytoplasm surrounded by fibrous septa. The fibrous septa and fat lobules showed dense infiltration with chronic inflammatory exudate with focal acute inflammatory cells. There was no evidence of malignancy or granuloma formation. The histopathology report revealed chronic mastitis in breast with micro abscess formation associated with acute fat necrosis. FNAC test of purulent material from breast lump showed the presence of cellular aspirate with necrotic background, few RBCs with large number of polymorphs, few lymphocytes and macrophages. No epitheloid cells/giant cells were seen. In Ziehl-Neelsen staining of breast tissue, no AFB were detected. The culture report of pus taken from the abscess has been shown in Table 2.

At the time of third episode of breast abscess in 2016, the patient visited Unani clinic, Herbs and Hakim and started her treatment. The patient was given cupping therapy to drain out the pus. The number of cups used to drain out the pus on the first and second days was 4 and 3, respectively. On third, fourth and fifth days, only 2 cups were applied to drain the pus. Cupping helped in complete removal of the pus from the abscess. Cupping was done for 8 days after which the wound was packed with raw papaya material and observed after 24 h. This was followed by daily dressing of the wound till one month. Unani medicines were prescribed to the patient from day first of cupping till forty days. These included *Cap Mefsil*, twice a day; *Capsule Huma Jadeed*, twice a day; 10 ml *Syrup Live tone*, twice a day; 10 ml *Syrup Aijicid*, twice a day; 1 tea spoon *Safoof Kishnizi*, twice a day and 2 tablets of *Habbe Mussafi Khoon*. After one year, in 2017, the patient was suggested to undergo USG examination and interestingly, no abnormality was detected in the breast. There was no liquefactionand breast abscess did not recur (Fig 3). The patient was continued for follow-up visit checking after every three months and was being given oral medicine "Arq-e-Shahtra" as a prophylaxis. The patient did not complain about any signs of breast abscess. In 2019, the patient was again asked to do USG examination of breast (done at vision sonography & colour doppler clinic, Rasta peth, Pune-411011) where no abnormality was detected (fig 4). The patient has now been declared completely free from the abscess since three years and continues to take Arq-e-Shahtra and come for three-month follow-up visits.

Table 1: Haemogram report of patient during the first episode (2014) of breast abscess

Haemogram		**Ref Range**
Haemoglobin	13.1 gm%	12.5-14.7
RBC Indices		
RBC count	4.87 mil./cmm	3.8-5.8
Haematocrit (PVC)	39.1%	37-47
MCV	82.3 fL	76-96
MCH	26.9 pg	27-32
MCHC	33.2 gm/dl	30-35
RDW	12.8%	11.5-14.5
Total WBC Count	1300/cmm	4000-11000
Differential Count		
Neutrophil	76%	45-65
Lymphocytes	20%	20-45
Eosinophil	02%	0-6
Monocytes	02%	0-8
Basophil	00%	0-1
Platelets Indices		
Plate Count	356000/cmm	150000-450000
Peripheral Smear Examination (PBS)	Normocytic and Normochromic	
Platelet Comment	Adequate	

Table 2: Culture report of pus from breastabscess (done in 2015)

Organism present	Staphylococci
Sensitivity of organism to different antibiotics	
Amikasin	2+
Ciprofloxacin	1+
Clarithromycin	3+
Cefotaxime	3+
Cefuroxime	3+
Cefoperazone	3+
Ampiclox	2+
Cefadroxil	2+
Roxythromycin	2+
Gentamicin	2+
Azithromycin	3+
Resistance of organism to antibiotic	Sparfloxacin

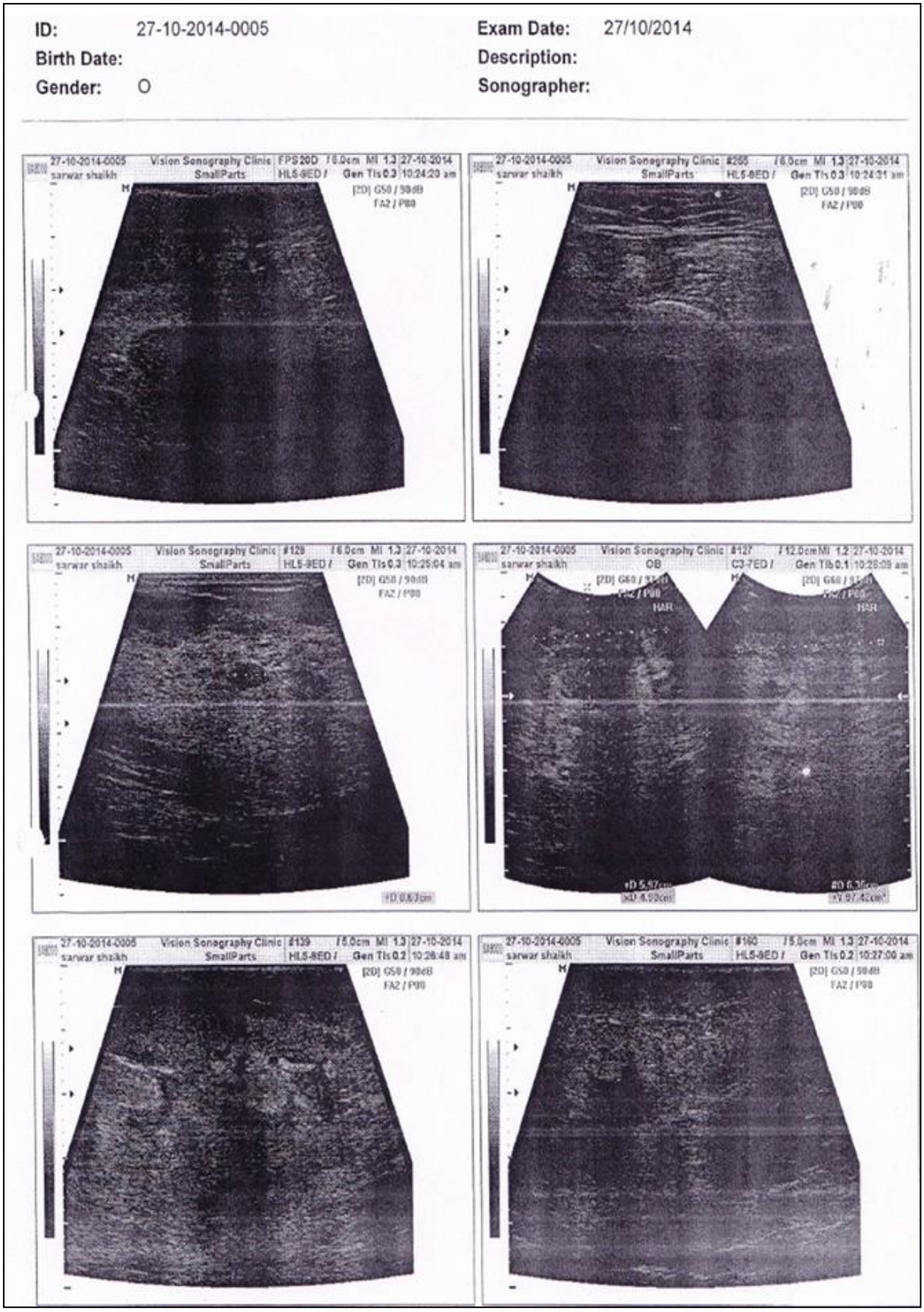

Fig 1: USG examination of right breast of patient done in 2014

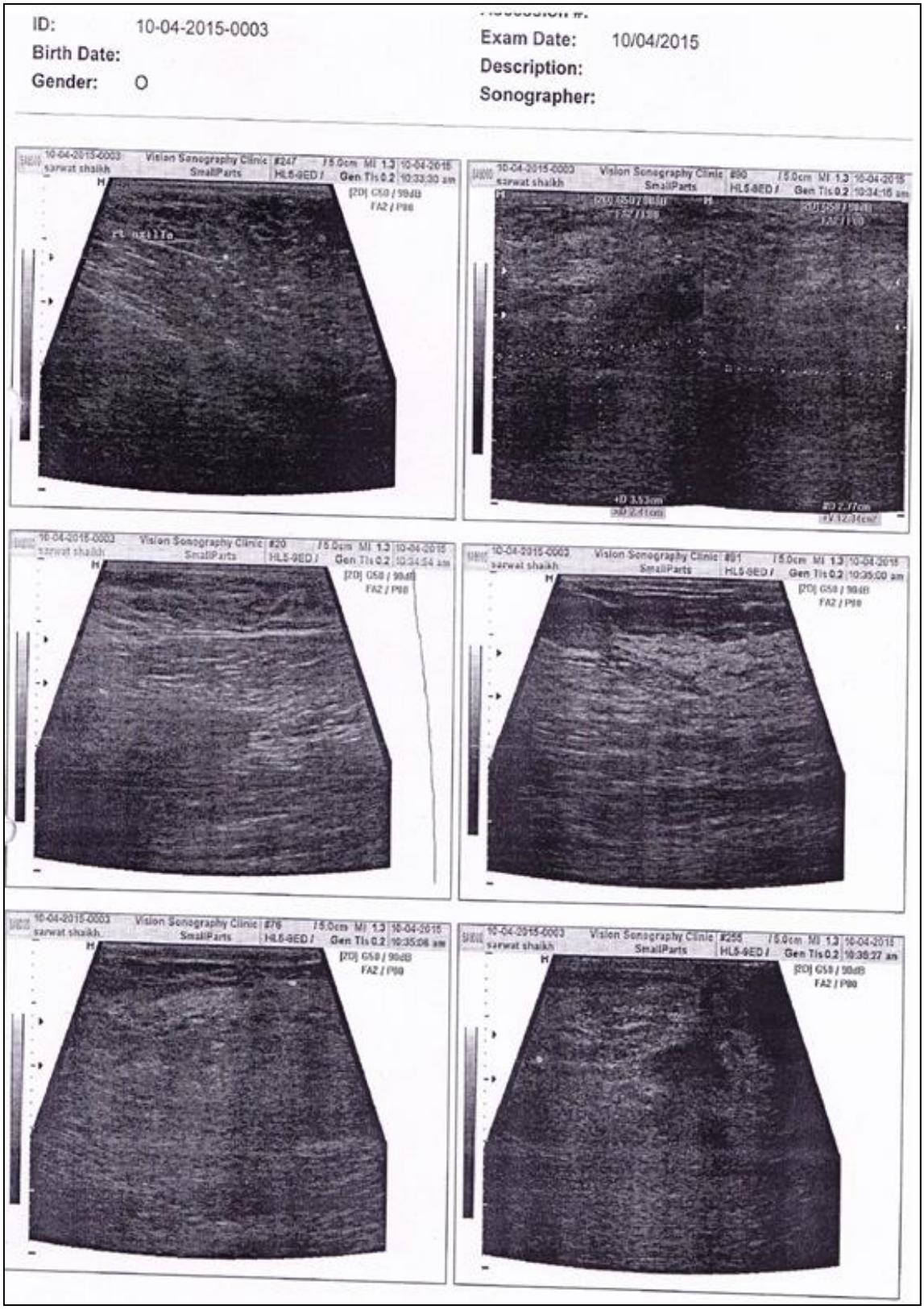

Fig 2: USG examination of right breast of patient done in 2015

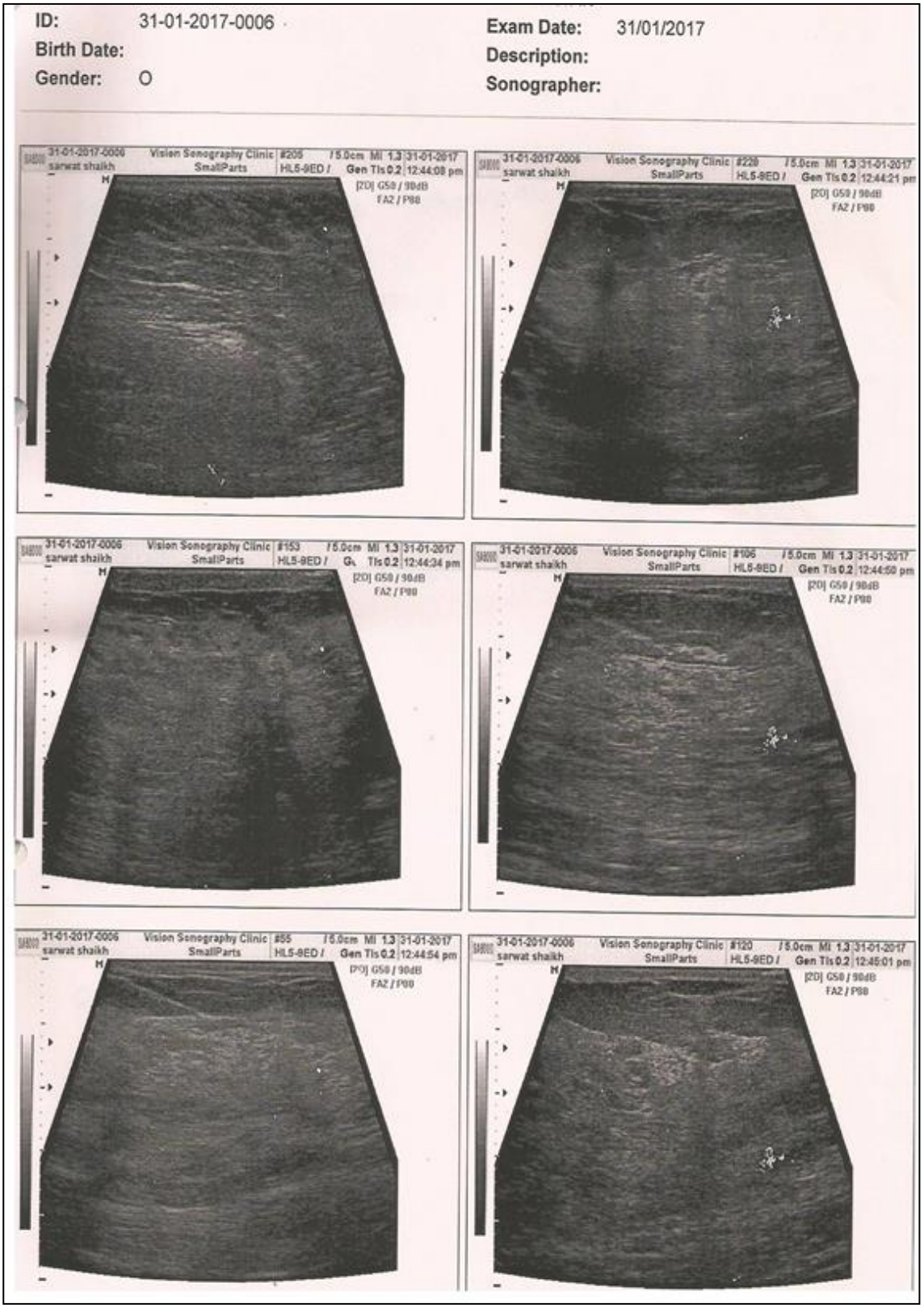

Fig 3: USG examination of right breast of patient done in 2017

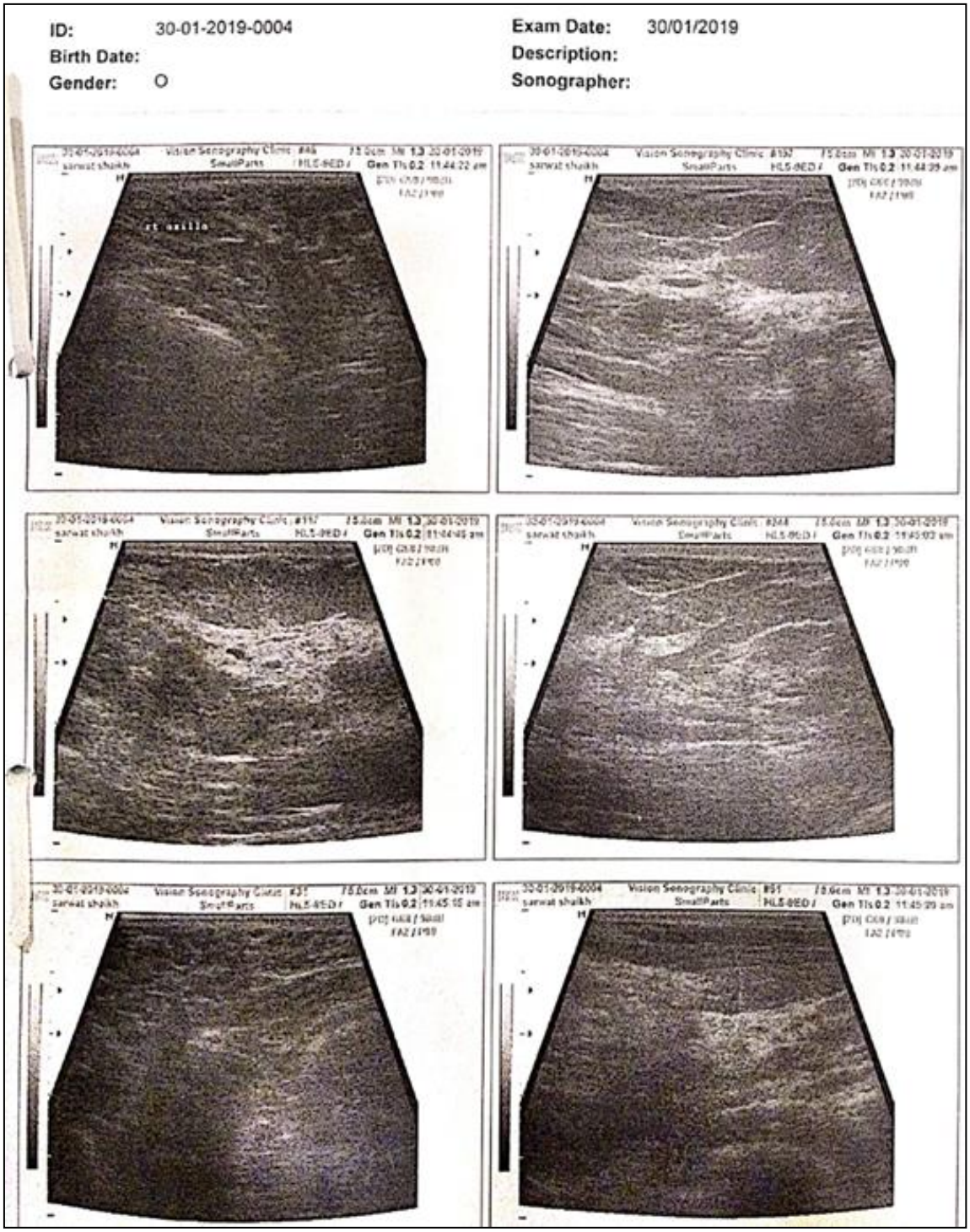

Fig 4: USG examination of right breast of patient done in 2019

4. Discussion

The patient with recurrent breast abscess was successfully treated by cupping therapy, raw papaya paste dressing and oral medication with no episode of recurrence. Initially, the morbid matter was removed by cupping therapy mentioned in Al-Qanoon Fit-Tib [5] (ref), Kamilu-Sana [6], Kitabul-Umda Fi Jarahat [7], Jarahat-Zahraviya [8] and Al-Razi [9]. Cupping isan ancient form of alternative medicine that utilizes light suction to improve mobility and blood flow [10]. In cupping therapy, the cup is applied centrally and a localized negative pressure causes compression of the skin at therim of the cup and distraction of the skin and underlying tissue within the interior of the cup.[11] The lowered pressure within the interior of the device causes a pressure difference between the skin surface and underlying blood vessels that enhances blood circulation, treats congestion and stops the extravasation from the tissues [11]. The therapy also improves the lymph flow, capillary permeability and vascularisation of the affected region [12]. It has been shown to be useful in the treatment of chronic venous leg ulcers to promote wound healing through a number of mechanisms [12]. These include edema reduction, increased wound/dermal perfusion, increased granulation, tissue stimulation, decrease in bacterial load, and enhanced removal of wound exudates [13]. Studies done on patients with pressure ulcers found that cupping therapy acts mainly by increasing local blood circulation and relieving the painful muscle tension [14, 15]. It mainly involves improving

microcirculation, promoting capillary endothelial cell repair, accelerating granulation, and angiogenesis in the regional tissues [14, 15]. Cupping therapy has been traditionally recommended for inflammatory conditions and in modern times it is often used for conditions involving pain, such as back pain, arthritis etc [16].

The patient was given oral medicines that have specific activities. Capsules *Mefsil* and *Huma Jadeed* have astringent [17] and antiseptic effects [19], respectively. *Syrup Livetone* is a liver corrective [19], *Safoof kishnizi* is a coolant, *syrup Aijicid* is antacid whereas *Habe Musaffi Khoon* has anti-inflammatory, anti-microbial, anti-bacterial, anti-fungal, anti-viral and wound healing properties [17-19]. The wound was treated with raw papya dressing that not only cured the wound but also improved the quality of the skin around the abscess markedly and rapidly. The treatment with raw papya dressing has reference from various Unani text books, e.g., Tajul-Mufradat [20] (Khwas-ul-Advia), Makhzan-ul-Mufradat [21] (Khwas-ul-Advia) and Khazain-ul-Advia [22]. Papaya dressings normalize the skin micro-environment, allowing healing to take place at the normal rate. Indian papaya or *Carica papaya* is known to have rapid de-sloughing and wound-healing properties since ancient times due to the presence of protease enzymes [23, 24]. Green papaya is rich in enzymes, papain and chymopapain, which have strong digestive properties, with an ability to dissolve dead tissue [25, 26]. The extracts of ripe and unripe papaya fruit and seeds have been reported to be active against Gram-positive and Gram- negative bacteria [27, 28]. The substance has protein-like properties and yields the aglycone of glucotropaeolin benzyl Isothiocynate (BITC) which is bacteriostatic, bactericidal and fungicidal [29]. The wound healing property of papaya stem has been reported in albino rats [30]. The efficacy and safety of papaya dressing has also been reported in patients with postoperative wounds [23]. The wound healing activity of papaya in experimentally induced diabetic rats [24] and diabetic foot ulcers [32] has also been reported.

5. Conclusion

In conclusion, the study demonstrated that combination of cupping therapy, raw papaya dressing and oral Unani medication successfully cured the patient with recurrent breast abscess. However, further studies are warranted on a large scalein patients with breast abscess to prove the efficacy of the combination therapy used in the present case.

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7. Conflict of interest

The authors declare no conflict of interest.

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