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Does Alternative and Traditional WASAM (Local cautery) Therapy Facilitate an Early and More Extensive Loco-regional Metastasis of Breast Cancer?

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Abstract

Introduction:

A large heterogeneous group of unproven remedies exist to treat cancer in both developed and developing countries. Some of these remedies often do more harm than good to the patients. The traditional medicine is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures. The traditional medicine in Oman is based on herbal treatment and skin treatment (massage, Cupping and skin burn “cautery” treatment-known as Wasam or Kaiy). WASAM (local cautery) is widely practiced in Oman for treating cancer. The loco-regional spread of breast cancer depends on numerous factors like tumour size, grade, receptor status, Ki67, Lympho vascular invasion, location of tumour within the breast, multifocal tumour, depth of tumour from skin, and status of local/regional lymphatic drainage.

Objective:

The objective of study was to analyze the frequency of loco-regional spread in female breast cancer patients who received Wasam therapy.

Patients and Methods:

It is a retrospective analysis of female breast cancer cases diagnosed between 2008-2014 at the Department of Surgery and National Oncology Center, the Royal hospital who were treated with Wasam therapy. Breast cancer patients' data were retrieved and reviewed from Electronic medical record system (EMR AL-SHIFA). The tumour (T) stage and Nodal (N) status were analyzed in all patients. The data of patients who received Wasam was compared with those who did not receive it as controls.

Results:

A total of 532 cases were diagnosed to have breast cancer during the study period, of which 464 were included in this analysis. Out of these 74 have Wasam and 390 were in

control group not receiving any Wasam therapy. No Wasam patient had N0 status while more than one third of the control group was N0.

About 15.9% (74/464) had Wasam therapy. It was found that 6.7%, 67.6% and 25.7% had one, 2-5 and more than 5 scars of Wasam therapy respectively. These patients underwent surgery (either mastectomy or breast conserving) with pathologic analysis of tumour and axillary lymph nodes (sentinel nodes, sampling or clearance). Approximately 50% of tumours were less than T2 stage. All 74 patients (100%) who received Wasam therapy showed axillary lymph node metastasis (N1 to N3), irrespective of their T stage (size of tumour). Further analysis is under way of these cases to look into additional risk factors like tumour grade, ER, PR, Her-2, Ki67, LVI, and location of these tumours within the breast.

Discussion:

The tumour size (T stage) is an important predictor of loco-regional spread. Published data suggest the frequency of axillary nodal metastasis are as: T1a 4.2%, T1b 7.4%, T1c 15.8%, T2 28.7% and T3 26.2%. The Grade I, II, and III have 22.1%, 51.6%, and 26.3% chances of axillary LN metastasis. ER+ve tumours have 38.9% and ER-ve tumours have 8.4% frequency of metastasis to axillary LNs. The data from our study suggest that the Wasam cases have higher and early loco-regional spread of breast cancer (100% vs. 19.2% in T1, 100% vs. 50% in T2, and 100% vs. 90% in T3). The Wasam therapy can set in local inflammation or infection. This can cause increased local temperature and oedema. This may well facilitate lymph angiogenesis and dilatation of existing channels.

Keywords:

Wasam, Breast cancer, Cautery, traditional medicine, Royal Hospital Oman

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Introduction

The World Health Organization (WHO) defines traditional medicine as: “the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness”⁽¹⁾. Some authors consider it a part of alternative medicine. A large heterogeneous group of these unproven remedies exist to treat cancer in both developed and developing countries. These remedies often do more harm than good to the patients.

In Oman, traditional medicine is practiced like most of the other countries in the world. The traditional medicine in Oman as in most of Arab-Islamic countries is based on Islamic science of Medicine of 8th to 15th century old Egyptian, Indian, Persian, Greek and Roman Medicine. This was based on herbal treatment⁽²⁾ and skin treatment (massage, Cupping and skin burn “Cautery” treatment-known as Wasam or Kaiy)⁽³⁻⁴⁾.

WASAM therapy is widely used in Middle East, Arabic peninsula and African countries. Wasam is the use of heated metal for local skin applications. It is used to treat several diseases including cancer. It is widely practiced in Oman for treating cancer, including breast cancer. The outcome of it is never studied, and there is no research data or review on this subject in the modern published researches.

The loco-regional spread of breast cancer depend on numerous factors like tumour size, grade, receptor status, Ki67, Lympho vascular invasion, location of tumour within the breast, multifocal tumour, depth of tumour from skin,

and status of local/regional lymphatic drainage. There may well be other additional yet unknown factors contributing to early spread or flaring of breast cancer.

It is an observation by the clinicians treating breast cancer in our institute that patients with breast cancer who had wasam had more early and extensive nodal involvement. The aim and objectives of this study were:

- To find the incidence of local treatment of Wasam in breast cancer cases
- To explore and analyze the Nodal stage of breast cancer, where Wasam application was used
- To compare the Nodal stage of breast cancer, where Wasam was not used

Patients and Methods

It is a retrospective analysis of female breast cancer cases diagnosed between 2008 and 2014 at the Royal hospital (Department of Surgery and National Oncology Center) Muscat Sultanate of Oman.

The inclusion criteria were:

- All breast cancer cases diagnosed between 2008-2014
- All age groups
- Defined and documented Nodal (N) staging
- Confirmed histopathology diagnosis of breast cancer

The exclusion criteria were:

- If patients have wasam after staging, after surgery or during treatment
- If patient has skin conditions that were not documented at initial presentation

The study arm included patients having Wasam at their

Tumour (T) stage	Nodal (N) stage							
	Study Arm (WASAM)				Control Arm (Without WASAM)			
	N0	N1	N2	N3	N0	N1	N2	N3
T1 09/46	0	4 (44.4%)	4 (44.4%)	1 (1.1%)	37 (80.4%)	09 (19.6%)		
T2 35/186	0	09 (25.7%)	21 (60.0%)	05 (14.3%)	93 (50.0%)	56 (30.1%)	37 (19.9%)	0
T3 26/139	0	05 (19.2%)	19 (73.1%)	02 (07.7%)	14 (10.1%)	21 (15.1%)	36 (25.9%)	68 (48.9%)
T4 04/19	0	0	0	04 (100.0%)	0	02 (10.5%)	03 (15.8%)	14 (73.7%)
Total 74/390	0	18 (24.3%)	44 (59.5%)	12 (16.2%)	144 (36.9%)	88 (22.6%)	76 (19.5%)	82 (21.0%)
P values	<0.0001	0.7632	<0.0001	0.4302	<0.0001	0.7632	<0.0001	0.4302

Table 1: Correlation of tumour (T) and Nodal (N) status

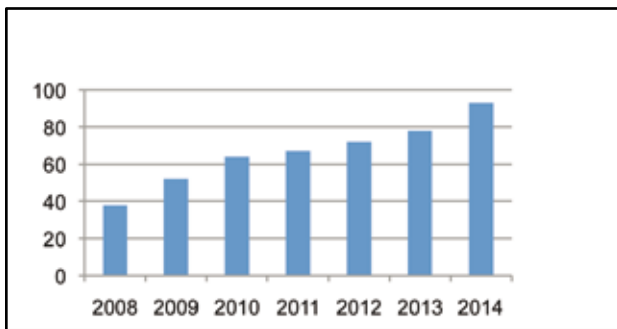


Figure 1: Year-wise case distribution

initial presentation to the breast surgery clinic. The control arm contained breast cancer cases with no Wasam at their initial presentation and did not have it during treatment.

Results

A total of 532 cases were diagnosed with Breast cancer in our center during study period (2008-2014). After exclusion as per criteria defined, 464 were included in this analysis. Seventy four (74) of these had Wasam and were in study arm, while 390 were in control arm.

Age: The age of patients ranged between 21-88 years (mean age 55.81yrs). Age group distribution was 20-30 years = 4 cases, 30-40 years = 89 cases, 40-50 years = 108 cases, 50-60 years = 99 cases, 60-70 years = 76 cases, 70-80 years = 54 cases and >80 years = 34 cases.

Year-wise Distribution: The year-wise distribution of cases were as follows: In years 2008 = 38 cases, 2009 = 52 cases, 2010 = 64 cases, 2011 = 67 cases, 2012 = 72 cases, 2013 = 78 cases and 2014 = 93 cases (Figure 1).

Number of Wasam (scars): Five patients have one wasam, 50 cases had 2-5 wasam, and 19 cases had more than 5 wasams (Figure 2).

Morphology: Histopathology examination confirmed 65% as ductal carcinoma, 15% as lobular carcinoma, 8% intraductal carcinoma, as the main pathologic types.

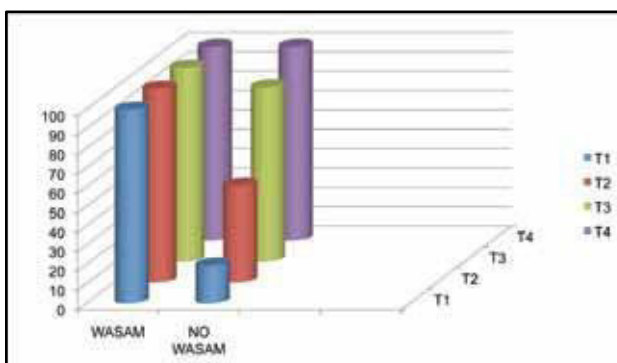


Figure 3: Correlation of tumour (T) and Nodal (N) status

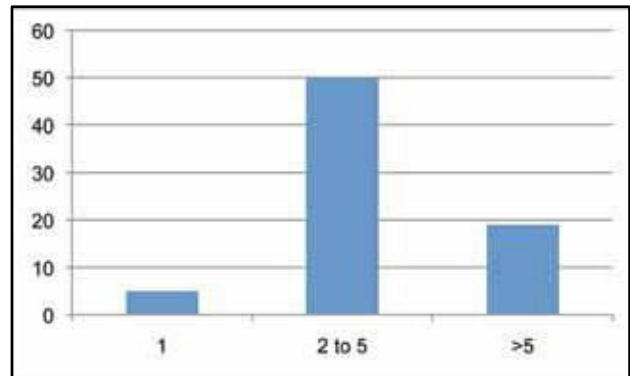


Figure 2: Number of Wasam

T (tumour) and N (node) staging: The patients with Wasam in study group showed no patient in N0 stage, 18 (24.3%) as N1 stage, 44 (59.5%) as N2 stage, and 12 (16.2%) as N2 stage (16.2%). On the other hand, in control arm without wasam, 144 were N0 (37%), 88 were N1 (22.6%), 76 were N2 (19.4%) and 82 were N2 (21%) (See Table 1)..

The T staging for the study group were as follows: T1 = 9 cases (12.2%), T2 = 35 (47.3%), T3 = 26 (35.1%) and T4 = 4 (5.4%). The control group showed T1 = 46 (11.8%), T2 = 186 cases (47.7%), T3 = 139 cases (35.6%) and T4 = 19 cases (4.9%). (See Table 1 and Figure 3).

Correlation of tumour (T) and nodal (N) status: In the Study group tumour stage T1 showed 4 cases N1, 4 cases N2 and 1 case N3 with **No case in N0 stage**. In tumour stage T2 there were 9 cases N1, 21 cases N2 and 5 cases N3. In tumour stage T3 there were 5 cases N1, 19 cases N2, and 2 cases of N3. In tumour stage T4 **all 4 cases** were N3 (Table 1). On the other hand in Control group tumor stage T1 exhibited 37 cases as N0, and 9 cases N1. The T2 stage exhibited 93 cases as N0, 56 cases as N1, and 37 cases as N2. Control group T3 stage showed 14 cases in N0, 21 cases in N1, 36 cases in N2, and 68 cases in N3 nodal stage. Tumour T4 stage had 2 cases in N1, 3 cases in N2, and 14 cases in N3 nodal stage (Table 1 and **Figure 3**). Graph pad statistical software was used and Fischer exact test was applied to determine the statistical significance. The p values indicate that the difference is statistically significant.

Discussion

History: Earliest historical Wasam treatment were mentioned and practiced by the ancient Egyptians in the management of advanced ulcerated breast cancer (5). Hippocrates recommended it for several conditions. The Prophet Mohammed (PBUH) did not forbid Wasam but discouraged the use of fire for treatment. In Arabic-Islamic literature, Abul Qasim Al Zahrawi (Albucasis d. 1013 AD), described Wasam in several ailments including



Figure 4: Instruments for and Wasam for fungating breast cancer



Figure 6: Instruments for and Wasam for fungating breast cancer

breast cancer⁽⁵⁻¹⁰⁾. He recommended circular Wasam around the tumor with round iron instrument in different setting with always smaller circles (Figure 4-6). He also stated that this treatment is valid for early stages but when it is advanced he never saw anyone who could cure it and neither he have any cure for it.

Wasam in Oman: The indications and applications of Wasam practice are variable. The site or location depends on the patient's complaints like in Jaundice it applied to the left hand, in chest pain with shortness of breath applied to the 4th and 5th anterior or posterior ribs on the same side of the pain, and in Sciatica it could be as much as 17 cautery buns at different locations in back and leg. Omani Wasam practitioners utilize metal sticks or iron nails (Figure 4-6). The sticks are heated over hot charcoal until they become red and hot as charcoal. The "Wasam treatment practitioner (WTP)" places the hot metal over a specified location on the skin for a few seconds causing superficial skin to burn. Most of the WTP are now doing ring burn of the breast and a burn on the tumor itself, circumferentially to the breast then above the tumor (Figure 4-6).



Figure 5: Wasam Nail

Wasam in modern literature: We reviewed the medical literature for the key words Wasam, kaiy, cautery and traditional medicine. We found very few studies and descriptions. Radha Shenoy et al⁽¹¹⁾ described Wasam for treatment of cataract in a 5 years old child but with lack of evidence-based scientific and suggestion that it is often harmful than beneficial. Alsaadoon et al⁽¹²⁾ described pediatricians experience in encountering role of complementary and traditional medicine in pediatric patients in Oman. They found herbal therapy was the most commonly used method (38.9%), followed by spiritual healing (33.9%), cautery (20.2%), Curucoma (15.7%), acupuncture, bone healing and Chinese healing. Elaobda et al⁽¹³⁾ studied cautery for the cure of disease in Muslim Bedouin patients. Though there was no systematic assessment available, 35.7 % of the patients undergoing cautery therapy said that they were prepared to use it again in the future. Abou-Elhamd et al⁽¹⁴⁾ described the use of cautery for pain relief explaining it to be un-scientific, hazardous, and urged to stop this undesirable practice. There are further reports of cautery use in medicines discussing its pros and cons⁽¹⁵⁾. Kyo et al⁽¹⁶⁾ described cautery and wasam use in wound healing. Mona and Abdullah⁽¹⁷⁾ reported that most patients undergoing cautery are uneducated (60%), do it on advice of relatives (70%), and substantial risks (disfigurement, keloid, blisters, abscesses) associated with cautery treatment.

The loco-regional spread in breast cancer depends on tumour size, grade, receptor status, Ki67 index, lympho-vascular invasion, perineural invasion, location of tumour

in the breast, multi-focality, depth of tumour from skin, nodal diffusion, and status of loco-regional lymphatic drainage. The published data suggest the frequency of axillary nodal metastasis in relation to T stage is as: T1a 0-5%, T1b 13%, T1c 29%, T2 38% and T3 71%⁽¹⁵⁾. The Grade I, II, and III have 22.1%, 51.6%, and 26.3% chances of axillary LN metastasis. ER+ve tumours have 38.9% and ER-ve tumours have 8.4% frequency of metastasis to axillary lymph Nodes^(16,18).

In our study the nodal involvement in study arm (Wasam) and control arm (No Wasam) was: T1 100% vs. 20%, T2 100% vs. 50%, T3 100% vs. 90% and equal 100% in T4. The data from our study clearly and conclusively indicate that patients with Wasam have an early and more extensive (N3 vs. N1) loco-regional (Nodal) spread of breast cancer.

The lymphatic system serves as the second circulatory system and one of the body's primary defences against invasion by infection, chemical toxins, and tumour cells. Lymphatic vessels and lymph nodes (lymphatic tissues) are connected by a network of thin-walled drainage channels called lymphatic capillaries. Lymphatic capillaries are located throughout most of the body under the skin. Lymphatic system serves also as tool for tumour metastasis from breast cancer. Activation of the system occurs with higher flow of lymph from site of injury to the lymph nodes. As lymph filters slowly through the node, mononuclear phagocytes filter out and destroy foreign substances. These phagocytes also interact with lymphocytes to generate an immune response to any skin insult. Skin burn caused by Wasam therapy can set in local inflammation and infection. This can cause local reaction with increased local temperature and oedema. This may well facilitates lymph angiogenesis and dilatation of existing channels, thus increasing the chances of migration and deposition of cancer cells in the regional lymph nodes. This is probably the reason and explanation as to why all patients, who had wasam, were having an early and more extensive nodal metastasis. On the other hand the control group showed frequency and extent of nodal involvement comparable to other local and international data.

Conclusion

Breast cancer patients with Wasam have shown a higher and early loco-regional metastasis, compared to patients who did not have any Wasam therapy. There is a need to look into the mechanism involved for early and extensive metastasis observed with Wasam, in a larger population and other tumour types. There is need for health education and health advocacy against the hazardous and non-scientific modes of treatment practices in our

culture and society.

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