

A Rare Clinical Entity in the Differential Diagnosis of Mastalgia: Thoracic Zona

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ABSTRACT

Objective: Mastalgia is the most common complaint of patients who are admitted for breast examination. Breast pain may originate breast tissue pathologies or non-breast pathologies adjacent organs. One of the causes of mastalgia is the varicella-zoster infection of the thoracic nerve ganglions. The zona zoster infection is painful, and vesicular lesions in the infected dermatomal regions can be observed because of the reactivation of the latent varicella (Herpes)-zoster virus (VZV) in the dorsal radix of medulla spinalis. There are no reviews of the zona cases of mastalgia patients in the literature. We aimed to investigate and represent the characteristics of these patients

Materials and Methods: Patients complaining of mastalgia and who were diagnosed with zona zoster infection after physical examination and clinical evaluation in the outpatients department of General Surgery were investigated retrospectively between January 2010 and January 2015.

Results: The study included 12 patients. All of them were female, and the mean age of patients was 51.66 (36–72) years. Eight of the zona cases were seen in the right breast (66.6%), and four of them were seen in the left breast (33.4%). Complaints of patients were pain (100%), eruption (70%), and burning sensation (60%). Underlying pathology was seen in one of the cases. Physical examination at admission revealed that four of the patients did not have any physical abnormality (33.3%). On the contrary of vesicular lesions, typical physical findings of zona, were seen in eight patients (66.7%).

Conclusion: Detailed history analysis and physical examination of the breast should be performed, particularly in older patients with unilateral severe mastalgia, and zona should be considered.

Keywords: Mastalgia, thoracic zona, pain

Introduction

Mastalgia refers to pain related to the breast, and is the most common breast symptom among women. Being a main presenting symptom to breast clinics, breast pain is detected in almost 80% of women in a lifetime (1-3). The pain in the breast may be due to pathologies related to the breast itself as well as surrounding muscle, joint and bone diseases. Pain originating from shoulder, arm or muscle diseases, myalgia, or due to shoulder rheumatoid disease can also be felt as breast pain (2, 4).

Breast pain may be classified as cyclic, non-cyclic and those related to extra-mammalian reasons. Mastalgia is most often associated with menstrual cycle. Non-cyclic mastalgia is defined as continuous or intermittent breast pain regardless of the menstrual cycle. Breast pain due to extra-mammalian causes are less frequent, nevertheless, they should be kept in mind in the differential diagnosis (4, 5).

Extra-mammalian reasons that may cause breast pain include diseases of neighboring muscles, bones and joints. Varicella (herpes) zoster (VZV) of the thoracic nerve ganglia is another cause of mastalgia. VZV is primarily the causative agent of varicella (chicken pox). Herpes zoster is caused by dormant VZV in the medulla spinalis dorsal root ganglia, and reactivation of this latent infection later in life. It presents with vesicular lesions within the dermatome innervated by that ganglia (6-8). The first symptoms of zona are pain and paresthesia. The pain can precede the rash by 1 week, and is the main common presenting symptom (7, 8).

Patients who presented with mastalgia and were diagnosed with zona have not been previously reported as a series, thus, we aimed to examine and to share the characteristics of our patients.

Materials and Methods

23287 patients presented to the General Surgery clinics of our hospital with breast pain between January 2010 and January 2015. Patient files of those diagnosed with thoracic zona were retrospectively analyzed. Patients with incomplete files were excluded from the study. The

Table 1. Dissemination of breast pain and lesions in breast quadrants

Breast quadrant/side	Upper inner	Upper outer	Lower inner	Lower outer
Right breast	1	2	1	4
Left breast	1	0	1	2



Figure 1. Erythematous, grouped, partially eroded vesicular eruptions in the outer quadrant of the right breast



Figure 2. Erythematous, grouped, partially eroded vesicular eruptions extending from the breast midline onto the left chest within a dermatome

definitive diagnosis was reached with Dermatology consults of the typical herpes zoster skin lesions. No additional laboratory analyses were done. Patient’s age, sex, medical history, presenting symptoms, physical examination and breast-imaging findings were evaluated. Patients were referred to Dermatology clinics for definite clinical diagnosis and treatment. Informed consents were obtained from all patients.

Statistical analysis

Descriptive statistics were used.

Results

Twelve patients diagnosed with thoracic zona were included in the study. All patients were female, with a mean age of 51.66 years (36-72).

Eight patients (66.6%) had right-sided and four patients (33.3%) had left-sided breast zona. Patient complaints included pain (100%), rash (66.7%), and burning sensation (60%). Only one patient had a past medical history of being operated on for colon cancer. All other patients stated that they have been stressed out lately. Patients presented approximately 3 days after the onset of pain. The localization of the pain was outer quadrant in 6 (50%), lower quadrant in four (34%), and upper-inner quadrant in two (16%) patients (Table 1). There were no objective signs in four (33.3%) patients in the initial physical examination, while typical zona rash was detected in 8 (66.7%) patients (Figure 1, 2). Two patients who had pain and burning sensation stated that they had a red rash at the site of their pain a week ago. Patients declared that the pain was more severe before the eruption.

Two patients were found to have rashes when they came back with their mammography results (2 days later). Breast ultrasonography was performed in two patients under 40 years of age, and a 5 mm simple cyst was observed in one while there were no other pathologies in the other patient. Mammography results of the six patients older than 40 years were evaluated as BIRADS 2-3. Other four patients did not undergo any additional imaging study. Patients were referred to the Dermatology outpatient clinics and were called back for follow-up after treatment. The mean duration of vesicular eruptions during dermatology follow-up was 4.8±0.9 weeks (3-6). The pain completely resolved in 10-25 days.

Discussion and Conclusions

The superficial skin sensory innervation of the breast is derived from the cervical plexus, while the deeper innervation is provided with 2nd-6th intercostals nerves (thoracic ganglion) (9). Pain resulting from the breast tissue can radiate to the chest wall, back, neck or inner arm. Similarly, pain originating from these areas may be felt as breast pain (10). Herpes zoster infection creates a necrotizing reaction in the dorsal root ganglion and leads to vesicular rash, pain and paresthesia in related dermatomes (11). Inspection and history taking are important for diagnosis. Unilateral vesicular eruption within a dermatome, and associated pain are pathognomonic (6). Some cases may be diagnosed with cytopathological examination and polymerase chain reaction methods (6). The presence of prodromal pain in our patient history, typical unilateral vesicular eruptions in the breast or surrounding tissues within the related dermatome were helpful for diagnosis. In our hospital’s conditions, the clinical diagnosis by Dermatology clinics has been considered as sufficient, and patient treatments were planned without need for any additional laboratory investigations.

Zona is one of the two different clinical manifestations of VZV infection, which is a DNA virus. The infection acquired during childhood remains latent in the dorsal root ganglia and is then reactivated leading to this clinical presentation. The incidence of herpes zoster in healthy humans varies between 0.4 and 11, varying with age and immune status (12). The incidence is increased with age, reported to be 1/100 after 75 years, equally affecting men and women. Its incidence

is significantly increased in patients with HIV and cancer, nevertheless, a work-up for malignancy is not suggested for all patients (6, 12, 13). All of our patients were women; we believe this was related to women experiencing more breast pain and their concerns on breast cancer.

In accordance with the literature, the mean age in the study was 51.66 revealing that zona is a disease of relatively advanced age. Predisposing factors for activation of a latent infection include previous chickenpox, varicella vaccines, age over 50, immune system suppressing conditions and medications, trauma and psychological stress (6). Within our cases, only one patient had colon cancer in remission, while the remaining stated that they were under stress recently. Advanced age alone may increase the risk for zona.

Herpes zoster may effect a single dermatome with eruptions or two adjacent dermatomes; mostly thoracic, cervical and ophthalmic dermatomes. The typical image of the lesions can vary from erythematous rashes to grouped vesicles. The lesions begin fading away in 7-11 days, but full recovery may take up to a month (12). All of our patients had zona within the thoracic nerve dermatomes, and thus presented to the clinics with breast pain. The mean duration of vesicular eruptions was 4.8 ± 0.9 weeks in our group (3-6).

Pain is the most common symptom in zona (14). The pain begins days or weeks before the rash, and is often the only symptom. The pain is described in the form of deep aching and burning sensation along with paresthesia, hyperesthesia and 'lightning bolt' pain (12, 15). Pain preceded the rashes in our patients. They all complained of severe pain and burning sensation.

It is not possible to predict when the pain will completely resolve. In some patients this pain that affects quality of life may continue for a long time, which is called post-herpetic neuralgia. The risk of post-herpetic neuralgia increases with age at a rate of 8-70% over a 30 to 60 day period. The resolution of pain after disappearance of lesions may take 6 weeks to 6 months (6,12). The duration of pain symptoms in our patients was 6.8 ± 1.3 weeks (5-9). Our results are consistent with the literature in this regard.

There is no consensus on the treatment for zona, or to whom the treatment should be applied. The main purposes of treatment are improvement with inhibition of viral replication, pain relief, and preventing complications such as post-herpetic neuralgia. Antiviral agents, steroids, regional local anesthetics and analgesics may be used for treatment, while there is no indication for topical antiviral treatments (6, 7). According to some authors, it is stated that symptom treatment alone is adequate for patients under 50 years of age. Some authors suggest analgesic and antiviral drugs in patients over 50 years and those with immune suppression (16). Initiation of antiviral treatment is recommended within 72 hours of the onset of the rash (6). Antivirals such as Acyclovir 800 mg 5x1 orally, and Brivudine 125 mg 1x1 may be selected (6). Aspirin and other non-steroidal analgesics are used in the treatment of post-herpetic neuralgia, but their efficacy is limited. Ibuprofen was found to be ineffective (12). It was explained to our study patients that the breast pain was not related to any problems arising from the breast. They were treated with Zovirax 800 mg (Acyclovir-GlaxoSmithKline) 5 times a day, for 5 days, along with non-steroidal analgesics to provide analgesia while being monitored for vesicular lesions. Zona patients with mastalgia expressed severe pain and all demanded analgesia, therefore they were prescribed analgesics. During follow-up, the vesicles and pain gradually decreased and disappeared.

In patients, especially older women, who present to General Surgery outpatient clinics with unilateral severe breast pain a thorough medical history and breast examination should be completed, and zona should be kept in mind as part of differential diagnosis in this group of patients. In addition, we think that clinicians in all specialties concerned with the breast should have sufficient information in the diagnosis and treatment of zona, not only Dermatologists.

Ethics Committee Approval: Ethics committee approval was not received due to the retrospective nature of this study.

Informed Consent: Written and verbal informed consent was obtained from patients who participated in this study.

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