COMPLICATED SUBAREOLAR BREAST ABSCESS IN NON-LACTATING WOMAN: CASE REPORT AND ANALYSIS

Nikolaos Tasis*, Ioannis Tsouknidas*, Panagiota Kripouri**,1, Georgios Filippou♦, Vasiliki Koumaki△ and Dimitrios Filippou♦♦

*Postgraduate Student, Department of Anatomy and Surgical Anatomy, Medical School, National and Kapodistrian University of Athens, Athens, Greece., **Resident in General Surgery; Postgraduate Student, Department of Anatomy and Surgical Anatomy, Medical School, National and Kapodistrian University of Athens, Athens, Greece., ♦General Surgeon.,△Department of Microbiology, Medical School, University of Athens., ♦♦General Surgeon; Director of Surgical Oncology and Laparoscopic Surgery IASO General Hospital; Research Fellow Department of Anatomy and Surgical Anatomy, Medical School, National and Kapodistrian University of Athens, Athens, Greece.

ABSTRACT

Background: Non-puerperal subareolar breast abscess was first described by Zuska et al. in 1951. The disease is benign. To treat it, control of galactorrhea is advised. In this case, galactorrhea was drug-induced, but the drug could not be discontinued. We discuss our plan of treatment of Zuska’s disease in a patient with uncontrollable galactorrhea.

Case summary: A fifty years old non-lactating female patient presented with a subareolar breast abscess. She underwent a needle aspiration, a Hadfield’s procedure, incision and drainage and finally resulted in a lumpectomy. We discuss her case, her comorbidities and our plan of treatment.

Conclusion: We believe this case is remarkable because of the challenging treatment course of the otherwise benign disease. It suggests that in cases of continuing galactorrhea Zuska’s disease is surgically treated with the wound healing by second intention.

KEYWORDS breast abscess, Hadfield’s, needle aspiration, Zuska’s disease

Introduction

A non-perpetual subareolar breast abscess is a rare benign disease, arduously manageable for both physician and patient. This rare condition and its association with lactiferous duct fistulas were first described by Zuska et al. [1] in 1951. Therapy for this demanding condition remains controversial; it can take several time, many recurrences and may even raise the need for a radical solution like a mastectomy. This is a case report of a female patient suffering from Zuska’s disease with an extremely difficult therapy course.

Case Report

In December 2014, a fifty years old non-lactating female of Caucasian origin presented in a local hospital’s emergency room with redness, swelling and tenderness in the right breast. The patient was obese with a history of smoking, epilepsy, anxiety disorder and galactorrhea, and had given birth and lactated twice. Clinical examination revealed swelling and tenderness close and under the areola.

The subareolar abscess was identified and antibiotic treatment of 500mg cefaclor, three times per day, was administrated as empirical treatment. A week later the patient underwent needle aspiration for diagnostic and therapeutic purposes. In the bacterial culture that followed, Staphylococcus aureus was isolated. In May 2015 the patient presented to our centre, and asymptomatic lactiferous duct fistula was observed. Hadfield’s procedure (primary duct excision) took place under general anaesthesia and patient had a smooth postoperative recovery.

However, in February 2016, a new inflammation was noted in the same breast along with another subareolar abscess. A small incision and drainage took place.
In June 2016, there was a recurrence of the inflammation and the subareolar abscess. The decision for a radical solution was taken, and the patient underwent a lumpectomy. The wound healed by secondary intention and the results are satisfactory until today.

Discussion

Zuska’s disease affects mainly women, with a wide age range (second to an eighth decade [2]) but with several male cases reported [3,4]. Squamous metaplasia of the cuboid epithelium of the ducts was introduced in detail as the offset of the disease by Habif et al. [5]. Metaplasia leads to hyperkeratinization, obstruction of the duct by keratin plugs, dilation and eventually ruptures [6]. Keratin obstruction is considered as a foreign body setting off the inflammatory response. Bacterial invasion causes the formation of subareolar abscess, whose spontaneous drainage generates fistulas. Continual duct obstruction can lead to chronic inflammation and recurrences, raising the challenge for the physician [2].

Risk factors associated with peri- and subareolar non-perpetual breast abscesses include mainly smoking, type 2 diabetes mellitus (DM), obesity and nipple piercing. Bharat et al. [7] suggest a strong connection between smoking and obesity and primary breast abscess. There was also found the relation of recurrences with smoking and at least one co-morbid condition (hypertension, diabetes, asthma or psychiatric illness). Firm relativity between DM and breast abscess is encouraged by Rizzo et al. [8] as well. DM not only contributes to primary infection but also prolongs hospital stay and interferes with treatment management. Tobacco smoking and nipple piercing correlation with breast abscess are stated by Gollapalli et al. [9] along with proven high rates of recurrences for smokers. Overall, smoking seems to be the primary risk factor for primary breast abscess and recurrences, maybe due to lower \( \beta \)-carotene plasma levels [10] which provoke squamous metaplasia. Our patient was obese and a smoker. Resulting analysis above, considering her comorbid conditions, such as epilepsy and anxiety disorder, she was a high-risk patient for breast abscess. Control of our patient’s intermittent galactorrhea could ease her treatment. However, her galactorrhea was linked to prescribed antipsychotic drug intake. The patient received the antipsychotic under her psychiatrist’s order who strongly advised against any changes in her treatment plan because of her previous psychiatric history. Thus, galactorrhea could not be controlled. Smoking also explains her continuous recurrences and difficult management. Following needle aspiration of our patient, Staphylococcus aureus was isolated, which is likely the most common microorganism found in primary non-perpetual subareolar breast abscesses [11]. An anaerobic microorganism or mixed flora tend to be isolated in recurring abscesses more often, while there is a high percentage of sterile culture in both primary and recurring conditions [9, 10]. Dabbas et al. [12] reinforce this claim, stating Staph aureus as the most prevalent causative organism in both lactating and non-lactating women. Sterile cultures percentage found higher in non-lactating women, and anaerobic bacteria were as well the second commonest culture result. Rare bacteria isolated are found in the bibliography as well, such as C. Difficile [13] and Corynebacterium kroppenstedti [14] related with significant complications. Association of smoking and organism isolated is not supported, however, a slight increase of anaerobes and coagulase-negative Staphylococcus is noted [9]. Treatment of non-perpetual sub- or periareolar breast abscess is complicated.
Figure 4: Timeline of the clinical presentation.

Patient presents with breast abscess. December 2014

Cefaclor is prescribed. Staphylococcus aureus is isolated.

A symptomatic lactiferous duct fistula is observed. May 2015

Hadfield’s procedure is performed.

Another breast abscess is observed in the same breast. February 2016

Incision and drainage.

Reccurance -new abscess. June 2016

Lumpectomy.
and controversial. Early antibiotics administration seems to improve abscess formation and augmentation and to prevent a severe infection [2,10,12,15-20] especially in combination with aspiration or incision and drainage. Empiric antibiotic treatment recommendations differ. Amoxicillin with clavulanic acid and erythromycin with or without metronidazole when allergy to penicillin exists [16], fluclaxacillin with metronidazole [17] cloxacillin or first-generation cephalosporin [18, 19] are some of the antibiotic suggested. Aspiration with needle and drainage is noted as first-line treatment in bibliography [2, 15, 17, 18].

Incision and drainage are chosen when dealing with larger abscesses (<5cm) of needle aspiration are unsuccessful [18]. However surgical management is suggested early when breast abscess is complicated by fistula or necrosis [20]. Surgical management is mainly proposed when recurrent breast abscesses occur, more than 3 to 5 needle aspiration sessions took place or infection worsened [19]. When surgical management is chosen, removal of the obstructed lactiferous duct is vital. Failure to accomplish total excision may lead to recurrences [10]. Several techniques for lactiferous duct excision are described. Hadfield introduced an incision or the lower margin of the areola to allow lifting the nipple and including any fistulas or obstructed lactiferous ducts underneath. [21, 22] Hadfield’s technique is widely used [18], but other techniques with radical elliptical incision [15] or transverse incision through the nipple are also described with satisfactory cosmetic and healing outcomes. Finally, lumenectomy of radical mastectomy consists the last resort when recurrence follows excision of lactiferous duct or malignancy is revealed. In our patient, another subareolar abscess took place after Hadfield’s excision. The need for a radical solution led to a lumenectomy with satisfactory cosmetic results and recurrence-free until today.

Conclusion

Zuska’s disease or periareolar non-perpetual breast abscess is a complicated condition with the need for careful and delicate management. Several risk factors and mainly smoking contribute to the severity of the infection. Antibiotic use and needle aspiration with drainage are useful in early management, but failure may raise the need for invasive surgical care, lactiferous duct excision or lumenectomy like in our case. In cases of uncontrollable galactorrhea, we suggest surgical treatment of Zuska’s disease with wound healing by second intention. Careful and thoughtful management, however, will result in the desired outcome.

Disclosure Statement

There were no financial support or relationships between the authors and any organization or professional bodies that could pose any conflict of interests.

Competing Interests

Written informed consent obtained from the patient for publication of this case report and any accompanying images.

References


