



# Complicated Major Labia Abscess - Clinical Manifestation and Microbiology of Hospitalized Women

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## Abstract

**Background:** Women hospitalized with complicated Non-Bartholin major labia abscesses an uncommon insufficient investigated entity. The purpose of this study was to explore these patients characteristics, there clinical manifestation, mode of treatment and microbiology.

**Methods:** Hospitalized women with a diagnosis of major labia abscess were followed at the gynecological division of a university-affiliated tertiary medical center during January 2004 to December 2013. Decision for hospitalization was based on clinical symptoms such as severe pain, fever, swelling, redness and cellulitis, or no response to oral antibiotic treatment. Data on demographic parameters, age, clinical manifestations, diagnosis, mode of treatment, pus culture, blood test results, duration of stay and discharge were retrieved from the departmental computerized health records.

**Results:** Of 294 women diagnosed and hospitalized for vulvar abscess during the study period, only 27 (9.2%) were diagnosed with major labia abscess and comprised the study group. Mean age was  $35.2 \pm 13.2$  years (range 15-65 years). For all women, this was the first episode of labial abscess. Severe local pain was the main complaint, recorded for 17 (62.9%). Systemic fever and leukocytosis were recorded for only 8 (29.6%) and 10 (37.0%) women.

Incision and drainage of the abscess was successful in all cases. There were no cases of recurrent labial abscesses in our records. Only 33.3% of cultures were positive for bacteria. The most prevalent species were *Streptococcus* in 88.9%, *Escherichia coli* in 22.2% and *Staphylococcus* in 11.1%.

**Conclusions:** Hospitalization for major labia abscess is uncommon. Incision and drainage with systemic antibiotics is the appropriate treatment.

**Keywords:** Major Labia; Vulvar Abscess; Non-Bartholin Abscess

## Introduction

Vulvar abscess is a common gynecologic problem rarely results in severe illness. The skin and hair follicles of the labial surface are subject to infections common to these structures in other parts of the body. These include folliculitis, skin abscesses, furuncles, and carbuncles. The abscesses typically originate as simple infections that develop in the labial skin or subcutaneous tissues. Spread of infection and abscess formation in the labial area is facilitated by the loose areolar tissue in the subcutaneous layers and the contiguity of the vulvar fascial planes with the groin and anterior abdominal wall [1,2]. Labial abscesses have been reported to be mixed polymicrobial infections, consisting primarily of Methicillin-Resistant *Staphylococcus Aureus* (MRSA), enteric gram-negative aerobes and female lower genital tract anaerobes [3-5].

The incidence of Non-Bartholin major labia abscess is unknown. Risk factors include obesity, poor hygiene, shaving or waxing of pubic hair (e.g., labial trauma), immunocompromised women (e.g., diabetes, acquired immunodeficiency syndrome) and pregnancy. However, many women with labial abscesses have no apparent risk factors [1,2].

Treatment depends upon the lesion size and the patient's risk for failure of therapy or systemic infection. Incision and drainage of a labial abscess is typically managed in the outpatient setting [2]. Rarely, a labial abscess requires inpatient incision and drainage under regional or general anesthesia. Indications for such are large size, intractable pain, suspicion that the abscess may extend to another anatomic compartment (e.g., thigh, anterior abdominal wall), immunocompromised, or post-drainage complications.

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The purpose of this study was to explore the patient characteristics, clinical manifestation, and mode of treatment of women hospitalized with Non-Bartholin major labia abscess.

## Materials and Methods

### Study population

We searched computerized medical records for all women hospitalized with a diagnosis of labial abscess at the gynecological division of a university-affiliated tertiary medical center during January 2004 to December 2013.

The decision for hospitalization and surgical intervention was based on clinical symptoms and signs including severe pain, fever, swelling, redness and local cellulitis or no response to oral antibiotic treatment.

Complicated major labia abscesses defined by the need for hospitalization in contrast with labial infections resolved with oral antibiotic and out-patients clinic drainage.

The study was approved by the local Institutional Review Board.

### Data collection

Data on demographic parameters, age, clinical manifestations, diagnosis, mode of treatment, pus culture, blood test results, duration of stay and discharge were retrieved from the departmental computerized health records.

### Statistical analysis

Statistical analysis was performed with the SPSS software, version 20.0 (Chicago, IL). Data were analyzed using descriptive statistics. Statistical significance was calculated using the chi-squared test for categorical variables and the Student's t test for continuous variables. A multivariate logistic regression model was constructed to identify independent factors associated with labial abscess. A p value of less than 0.05 was considered statistically significant.

## Results

### General demographic characteristics

Of 294 women diagnosed and hospitalized for vulvar abscess (Bartholin and Non-Bartholin) during January 2004 to December 2013. Only 27 (9.2%) diagnosed with Non-Bartholin major labia abscess. Reasons for hospitalization were no-response to oral antibiotic treatment, severe pain, systemic fever, and the presence of cellulitis.

Mean age at diagnosis was  $35.2 \pm 13.2$  years (range 15-65 years). Mean number of children was  $1.9 \pm 2.3$ . In all women, this was the first episode of labial abscess. Mean hospitalization time was  $1.3 \pm 0.9$  days. The vast majority of women (92.6%) did not use the oral contraceptive pill and none used an intrauterine device.

### Clinical characteristics and management

The most common clinical manifestation was severe local pain reported in 17 women (62.9%). Ten (37.0%) reported local pain and swelling. Erythema was noted in 5 women (18.5%). On examination, local cellulitis was noted in all women while fever was recorded for 8 (29.6%) and leukocytosis in 10 (37.0%).

Twenty-two women (81.5%) received antibiotic treatment before hospitalization without clinical improvement. For 5 women (18.5%), antibiotic treatment was administered in the hospital.

All women were treated with incision and drainage under general anesthesia after receiving at least one dose of intravenous antibiotics to prevent bacterial spread and systemic inflammatory response. The first line antibiotic was Amoxicillin/clavulanic acid Igram, three times a day. In cases of known sensitivity or inappropriate clinical response, the antibiotic treatment was adjusted after consultation with a specialist in infectious diseases. During surgery, samples were sent for bacteriological evaluation.

### Bacteriology

Only 9 (33.3%) cultures stained positive for bacteria. The most prevalent species was Streptococcus in 8/9 (88.9%), Escherichia coli in 2/9 (22.2%) and Staphylococcus in 3.7%. Other species were rare, and polymicrobial infections were seen in only 1/9 (11.1%) of cases.

### Outcome

Incision and drainage of the abscess was successful in all cases. There were no cases of recurrent labial abscesses.

## Discussion

We described the clinical manifestations, bacterial characterization and mode of treatment for women hospitalized with complicated, non-Bartholin, major labia abscesses. The majority of major labia abscesses represent anterior extensions of Bartholin cysts or abscesses [6] whereas other labial abscesses originate from infected sebaceous cysts and folliculitis [7]. Indeed, in this study, only 27 women were hospitalized with non-Bartholin, major labia abscess compared to 267 women hospitalized with Bartholin abscess. The different origins of abscesses may explain why Bartholin's abscesses tend to recur [8], while labial abscesses do not. Thus, a recurrent case of labial abscess should be referred to as a new primary abscess, rather than recurrence. In fact, in our entire study group, we had no case of recurrent labial abscess.

Local pain was the main manifestation of labial abscess, with and without fever or leukocytosis. Less often recorded were erythema and/or swelling. Leukocytosis was recorded for 37%. These findings are not surprising, considering that infected sebaceous cysts, especially those arising from Methicillin-Resistant Staphylococcus aureus (MRSA) bacteria, tend to manifest as tender, red abscesses [3]. This supports the assumption that labial abscesses arise from infected sebaceous cysts of the major labia [6] and may explain the efficacy of systemic antibiotic treatment and drainage in eliminating the source of the abscess. In contrast, for Bartholin duct abscess the main goal of treatment is creation of re-canalization of the duct [9]. In the present study, we found that incision and drainage, including perioperative antibiotic treatment was successful in all cases, without recurrence.

In other studies MRSA bacteria was reported as the most common organism isolated from labial abscesses. An antibiotic regimen with sensitivity to MRSA bacteria, such as trimethoprim-sulfamethoxazole, is recommended in such cases [1,2]. Yet, in our population, the most common bacteria were Streptococcus species. This difference may be due to the anatomical location of these abscesses, and its proximity to the vagina, where normal flora contains Streptococcal bacteria. In contrast, the most prevalent bacteria in folliculitis (as well as in Bartholin's abscess) are Staphylococcus Aureus [6,10].

According to the most recent recommendations of the Infectious Disease Society of America, issued in 2014, treatment of inflamed epidermoid cysts, carbuncles, abscesses, and large furuncles should be by incision and drainage [11]. The decision to administer antibiotics

directed against *Staphylococcus aureus*, as an adjunct to incision and drainage, should be made according to the presence or absence of systemic inflammatory response syndrome [11].

The large proportion of negative bacterial culture results in our study was probably due to the pre-hospitalization oral antibiotic treatment received by most patients. Such initial treatment is common. Nevertheless, as in cases of infected sebaceous cyst and folliculitis, labial abscesses may be viral, bacterial, fungal or parasitic [10].

The limitations of this study are the retrospective review of data that may have precluded obtaining cultures prior to the administration of antibiotics in the hospital. Further, no data were available regarding pathogens that may have presented prior to oral antibiotic treatment before hospitalization. In addition, the findings are based on data recorded in the medical files, and it is not known whether any relevant data were not recorded.

In conclusion, hospitalization for non-Bartholin major labia abscess is uncommon, and comprises only a small proportion of hospitalizations for vulva abscesses. In all cases of hospitalization reported herein, incision and drainage with systemic antibiotic treatment demonstrated positive responses and was well tolerated. Recurrent cases should be referred as a new primary abscess rather than recurrence. Larger prospective studies are needed to define guidelines for hospitalization and the best mode of treatment.

### Contributors' Roles

Conception and design: Prof. Yoav Peled, Prof. Haim Krissi.

Acquisition of data: Dr. Anat From, Dr. Anat Shmueli.

Analysis and interpretation of data: Prof. Yoav Peled, Prof. Haim Krissi.

Drafting the article or revising it critically for important intellectual content: Prof. Arnon Wiznitzer, Prof. Yoav Peled, Prof. Haim Krissi, Dr. Anat Shmueli.

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