

Original Article

Frequency, Clinical Presentation, and Management of Bartholin's Abscess: A Case Study at Rabia Balkhi Hospital, Afghanistan in 2022

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ABSTRACT

Background: Bartholin gland abscesses represent a significant gynecological condition requiring proper clinical management to prevent complications. These abscesses develop from ductal obstruction or infection of the Bartholin glands, manifesting as localized pain, swelling, and erythema. Understanding their clinical presentation and management is crucial for optimal patient care in resource-limited settings. **Objective:** This study aimed to evaluate the incidence, clinical presentation, management strategies, and treatment outcomes of Bartholin gland abscesses at Rabia Balkhi Hospital, Afghanistan, in 2022. **Methods:** This retrospective cohort study analyzed the hospital records of women diagnosed with Bartholin's gland abscesses. The study identified 23 cases (n=23), representing 0.6% of all gynecological admissions. The data collected included demographic information, clinical presentations, treatment approaches, and outcome measures. **Results:** Among the 4,140 gynecological admissions, 23 cases (0.6%) of Bartholin gland abscesses were identified. The majority of cases (52%) occurred in women aged 25-35 years, with predominant clinical manifestations, including severe localized pain (96%), erythema (96%), and swelling (87%). This study employed three primary treatment modalities: incision and drainage (74%), marsupialization (17%), and drainage tube insertion (9%). Treatment outcomes demonstrated favorable results, with pain resolution achieved in 87% of patients within 48 hours postintervention. The overall recurrence rate was 13%, with no major complications observed during the study period. **Conclusion:** Bartholin gland abscesses predominantly affect women aged 25-35 years, and incisions and drainage are the most effective treatments. These findings emphasize the importance of early intervention and appropriate treatment selection on the basis of patient characteristics.

KEYWORDS

Bartholin's gland, abscess incision and drainage, treatment outcome, gynecologic surgical procedures, sexually transmitted infections

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INTRODUCTION

Bartholin's glands, located on either side of the vaginal opening, are essential for vulvar lubrication through mucus secretion. When these gland ducts become obstructed, fluid accumulation leads to Bartholin's cysts, which can progress to painful abscesses with significant discomfort and localized symptoms [1]. The clinical significance of Bartholin's gland abscesses (BGAs) is particularly notable in resource-limited settings, where access to specialized gynecological care may be restricted. Untreated abscesses can result in severe complications, including systemic infections, highlighting the crucial need for effective management [2].

The problematic aspects of BGAs are numerous. The incidence of abscess formation varies significantly across populations, with some regions, such as Abakaliki, Nigeria, reporting higher rates of progression to abscess formation [3]. Management challenges are compounded by the impact of the condition on women's quality of life and the potential for complications if left untreated. Although several treatment options exist, including incisions and drainage or marsupialization, there is no universal consensus on the optimal management approach [4].

Critical questions persist regarding the most effective treatment strategies and long-term outcomes. The relationships among patient characteristics, treatment selection, and clinical outcomes remain inadequately understood, particularly with respect to the development of healthcare systems. Trauma, infection, and sexually transmitted infections (STIs) have been identified as contributors to BGA development; however, their relative importance and implications for treatment selection remain unclear [4].

Significant gaps exist in the current knowledge, particularly regarding the standardization of treatment protocols and understanding of recurrence patterns. Although numerous studies have investigated the clinical features and treatment outcomes of Bartholin abscesses, a consensus on optimal management strategies remains elusive [5–7]. Additionally, evidence regarding the efficacy of various treatment modalities in preventing recurrence is inconsistent, particularly in resource-limited settings. The role of STIs in abscess formation and the effectiveness of antibiotics in preventing recurrence require further investigation [8].

The relevance of this study lies in its potential to enhance clinical management strategies for BGAs, particularly in resource-constrained environments. By examining treatment effectiveness and recurrence patterns, this study aimed to contribute to the development of standardized protocols that can improve patient outcomes. This research is especially pertinent to healthcare systems in developing regions where evidence-based guidelines adapted to local resources and capabilities are essential. Therefore, this study aimed to evaluate the incidence, clinical presentation, management strategies, and treatment outcomes of BGAs at Rabia Balkhi Hospital, Afghanistan, in 2022. These findings are expected to provide valuable insights for optimizing treatment approaches and improving patient care in similar healthcare settings.

MATERIALS AND METHODS

Study design and setting

This retrospective cohort study was conducted at Rabia Balkhi Hospital, Afghanistan, to assess the frequency, clinical presentation, and management of Bartholin's gland abscesses [9]. The hospital serves as a major tertiary care center in Kabul, providing specialized gynecological services to diverse urban and rural populations. The study period spans from January to December 2022.

Participants and sampling

The study population comprised all adult female patients who were diagnosed with Bartholin's gland abscess during the study period. The diagnosis was established through clinical examination following standardized institutional protocols. The inclusion criterion included confirmed cases with complete treatment data, whereas the exclusion criterion included patients with incomplete records or those diagnosed with Bartholin's cysts without evidence of infection. The final analysis included 23 cases, representing 0.6% of all gynecological admissions ($n=4,140$).

Intervention and data collection

Data extraction utilized a standardized form to capture patient demographics (age, parity, and sexual history), clinical presentation (symptoms and signs), diagnostic methods, and treatment interventions. Treatment modalities included incision and drainage, marsupialization, and drainage tube insertion, with standardized protocols for each procedure. Clinical outcomes, including recurrence rates and complications, were systematically documented. Missing data management involved patient follow-up and consultation with the hospital staff. When information was unavailable, the corresponding variables were excluded from the analysis to maintain data integrity.

Ethical considerations

This study was approved by the Institutional Review Board of Rabia Balkhi Hospital (approval number 2022/001) and adhered to the principles of the Declaration of Helsinki. Patient confidentiality was maintained through data anonymization, and the requirement for informed consent was waived owing to the retrospective nature of the study. All patient information was securely stored and accessed by authorized research personnel.

Statistical analysis

Data analysis was performed via IBM SPSS Inc., version 25. Descriptive statistics were used to summarize patient demographics, clinical characteristics, and treatment methods. Continuous variables are expressed as the means with standard deviations, whereas categorical variables are presented as frequencies and percentages.

RESULTS

Demographic characteristics of the participants

Most cases ($n=12$, 52%) occurred in women aged 25-35 years, representing the peak reproductive age group. A substantial proportion of cases ($n=7$, 30%) were observed in younger women aged < 25 years, whereas the lowest frequency ($n=4$, 18%) was found in women aged > 35 years. This distribution pattern aligns with the typical reproductive age profile of women most susceptible to Bartholin's gland abscess, with a clear predominance in the middle-aged category. The data demonstrated a normal distribution skewed toward younger reproductive ages, which is consistent with the known epidemiology of this condition. The detailed age distributions are presented in Table 1.

Table 1. Demographic distribution of patients with Bartholin's gland abscess

Indicator	Frequency	Percentage (%)
Cases		
Bartholin's gland abscess	23	0.6
Other cases	4117	99.4
Age (Years)		
< 25 years	7	30
25 to 35 years	12	52
> 35 years	4	18

Clinical presentation and symptoms

Local symptoms dominated the clinical picture, with severe genital pain and inflammatory signs (redness and warmth) being the most prevalent manifestations ($n=22$, 96% for each). Localized swelling or edema was also frequently observed ($n=20$, 87%), demonstrating the characteristic triad of local manifestations. A notable proportion of the patients ($n=8$, 35%) reported dyspareunia, indicating a significant impact on sexual function. Systemic manifestations were less common, with leukocytosis present in approximately half of the patients ($n=12$, 53%), whereas fever and tachycardia were observed in a minority of patients ($n=4$, 18%). This distribution of symptoms suggests that a Bartholin gland abscess primarily presents as a localized

inflammatory condition, with systemic involvement occurring in a smaller subset of cases. The predominance of local symptoms over systemic manifestations has important implications for clinical diagnosis and management strategies. The comprehensive symptom profiles are presented in Table 2.

Table 2. Clinical manifestations and symptoms of patients with Bartholin's gland abscess

Category	Frequency (n=23)	Percentage (%)
Severe pain in the genital area	22	96
Dyspareunia (painful intercourse)	8	35
Swelling or edema	20	87
Inflammation, redness, and warmth	22	96
Leukocytosis (increased white blood cells)	12	53
Tachycardia and fever	4	18

Treatment modalities and outcomes

Incision and drainage emerged as the predominant therapeutic approach utilized in 17 patients (74%), reflecting its status as the primary surgical intervention. Marsupialization, a more definitive surgical procedure, was performed in four patients (17%), typically selected for patients with recurrent presentations or where long-term resolution was prioritized. Drainage tube insertion was the least frequently employed method, applied in only two cases (9%), suggesting its role as an alternative intervention in specific clinical scenarios. This distribution pattern aligns with current clinical practice guidelines, where incision and drainage are typically preferred as the first-line surgical approach owing to their simplicity, shorter procedure duration (mean, 25 ± 8 minutes), favorable outcomes in terms of pain resolution (87% within 48 hours) and low recurrence rate (13%). The relatively low utilization of marsupialization and drainage tube insertion suggests a selective approach for these alternative procedures, potentially reserved for patients with specific clinical indications or risk factors for recurrence. The treatment outcomes and distributions are presented in Table 3.

Table 3. Distribution of surgical treatment methods for Bartholin's gland abscess

Treatment Method	Frequency (n=23)	Percentage (%)
Incision and drainage of the abscess	17	74
Marsupialization	4	17
Drainage tube insertion	2	9

Differential diagnosis of Barthmann's gland pathologies

This comprehensive comparison table synthesizes the key diagnostic features that differentiate Bartholin's gland abscess from Bartholin's gland cyst across eight critical clinical parameters (Table 4). These distinctive characteristics are supported by recent literature, providing an evidence-based framework for clinical differentiation. The table clearly shows contrasts in both the local manifestations and the systemic manifestations between the two conditions. Local features show that while both conditions present with swelling, abscess cases exhibit tenderness and warmth, whereas cysts are nontender and fluctuant. The inflammatory response is markedly different, with abscesses showing localized inflammation and redness, whereas cysts lack significant inflammatory signs. Systemic involvement is another key differentiating factor, with abscesses potentially presenting with fever, tachycardia, elevated white blood cell counts, and features absent in cystic presentations. The aspirate characteristics provide definitive differentiation, with the abscess fluid being purulent and bacteria-containing, in contrast with the clear or viscous sterile fluid in cysts. These distinctions have direct therapeutic implications, as abscesses require more aggressive intervention with incisions, drainage, and antibiotics, whereas cysts may be managed more conservatively through marsupialization or watchful waiting. This systematic comparison facilitates accurate diagnosis and appropriate treatment selection in clinical practice.

Table 4. Clinical features distinguishing Bartholin's landing abscess and cyst

Feature	Bartholin's Gland Abscess	Bartholin's Gland Cyst	Ref.
Swelling	Present, tender, warm to touch	Present, nontender, fluctuant	[3]
Inflammation & Redness	Localized inflammation and redness	No significant inflammation or redness	[10]
Temperature of Affected Area	Warm and painful	Not warm, no significant pain	[4]
Systemic Symptoms	Fever, tachycardia, fatigue	No fever or systemic symptoms	[11]
Cellulitis	May develop with advanced infection	No cellulitis	[2]
White Blood Cell Count	Elevated	Normal	[1]
Aspirate Fluid Characteristics	Thick, purulent, containing bacteria	Clear or viscous, no bacterial content	[6]
Management Approach	Incision, drainage, and antibiotics required	Marsupialization or watchful waiting	[12]

Remarks: Summary features are obtained from previous research results shown in the references. Results may differ in other regions but still have similarities in clinical conditions.

DISCUSSIONS

The findings of this study provide significant insights into the epidemiology, clinical presentation, and management of Bartholin's abscesses in a tertiary care setting. The observed incidence rate of 0.6% among gynecological admissions aligns with previous research, particularly studies conducted in similar healthcare settings. This incidence rate, although seemingly low, represents a significant burden when considering the potential impact on women's reproductive health and quality of life [13–15]. These findings corroborate those of Krissi et al. [8], who reported a 2% incidence in their Israeli cohort, and Werner et al. [1], who reported a 1.7% incidence in Pakistan, suggesting regional variations in prevalence patterns.

Age distribution analysis revealed a predominant occurrence (52%) in women aged 25–35 years, which is consistent with findings from previous studies [4,16]. This age-specific predominance may be attributed to peak sexual activity and hormonal influences during reproductive years, which could contribute to increased susceptibility to infection and abscess formation. The lower incidence in women over 35 years of age (18%) suggests potential age-related protective factors, although the specific mechanisms involved remain unclear and warrant further investigation. The clinical presentation patterns demonstrated notable findings, with pain and inflammation present in 96% of the patients. This high prevalence of classical symptoms aligns with the established literature [2]. However, the relatively low rate of leukocytosis (53%) presented an interesting deviation from the expected patterns. This finding suggests that local inflammatory responses may precede systemic manifestations, highlighting the importance of early clinical recognition before laboratory markers can be detected. This observation challenges traditional diagnostic approaches that rely heavily on systemic inflammatory markers [17,18].

Treatment outcomes revealed the effectiveness of incision and drainage as the primary intervention, employed in 74% of cases, with a success rate comparable to that reported in previous studies [4]. The high success rate of incision and drainage, coupled with shorter hospital stays (mean 2.3 ± 0.8 days), supports its position as the first-line treatment option in acute presentations. The 13% recurrence rate observed aligns with previous research [19] and emphasizes the need for careful follow-up. The marsupialization procedure, which was utilized in 17% of the patients, demonstrated favorable outcomes, particularly in preventing recurrence. This finding supports previous research by Illingworth et al. [6], suggesting that marsupialization may offer superior long-term results in selected cases. The selective application of this technique, primarily in recurrent cases, indicates a thoughtful approach to surgical decision making on the basis of individual patient factors and disease characteristics [20–22].

The microbiological aspects of Bartholin gland abscesses deserve particular attention. Previous research has identified polymicrobial infections as a common etiological factor [10,23]. The

relatively low rate of systemic symptoms (fever in 18% of cases) suggests that local host defense mechanisms may effectively contain the infection in most cases, thereby preventing systemic spread. The relationship between the presenting symptoms and treatment outcomes provides valuable insights into clinical practice. The high prevalence of pain and swelling (96% and 87%, respectively), as presenting symptoms, underscores their diagnostic value [12,24–26].

These findings support the development of symptom-based diagnostic algorithms that could facilitate early recognition and intervention, particularly in resource-limited settings, where advanced diagnostic tools may not be readily available [27–29]. The management approach demonstrated in this study reflects the balance between surgical intervention and patient outcomes [30–33]. The predominant use of incision and drainage (74%) aligns with the current best practices [24,34,35] whereas the selective application of marsupialization (17%) suggests appropriate case selection. The low rate of complications and favorable recovery patterns validate this approach, particularly in settings where resource optimization is crucial [22,36–38].

Clinical implications

The findings of this study have several important implications for clinical practice and public health. The predominance of cases among women aged 25--35 years emphasizes the need for targeted screening and preventive strategies in this demographic group. The high success rates of incision and drainage support their continued use as first-line treatment options, particularly in resource-limited settings. However, the recurrence rate of 13% highlights the importance of comprehensive follow-up protocols and patient education. The observed pattern of clinical presentation, particularly the high prevalence of pain and inflammation but relatively low rate of systemic symptoms, suggests the need for early recognition on the basis of local signs rather than waiting for systemic manifestations. This finding has important implications for primary care providers and emergency departments, where early identification can facilitate timely intervention. This study's findings regarding treatment outcomes provide valuable guidance for clinical decision-making. The successful management of patients with shorter hospital stays demonstrates the potential for cost-effective care when appropriate treatment protocols are followed. These results support the development of standardized treatment pathways that can be adapted to different healthcare settings.

Limitations

This retrospective design inherently introduces potential selection and information biases, particularly in the documentation of symptoms and treatment outcomes. The reliance on existing medical records may have resulted in incomplete capture of important clinical variables and potential confounding factors. This limitation is consistent with the challenges encountered in similar retrospective studies. The relatively small sample size limits the statistical power of the analyses and the ability to detect subtle associations between the variables. The lack of standardized follow-up protocols across all patients may have affected the accuracy of the recurrence rate estimation and long-term outcome assessment. Additionally, the absence of detailed microbiological data limits our understanding of the role of specific pathogens in abscess formation and treatment responses. The study's timeframe of one year may not capture seasonal variations or long-term trends in disease presentation and treatment outcomes. The limited demographic diversity of the patient population may also affect the generalizability of our findings to other geographical and socioeconomic contexts. Furthermore, the lack of quality-of-life assessments and patient-reported outcomes represents a significant gap in understanding the full impact of the condition and its treatment.

CONCLUSIONS

This study provides valuable insights into the epidemiology, clinical presentation, and management of Bartholin gland abscesses in a tertiary care setting. These findings confirm the effectiveness of traditional surgical approaches while highlighting areas for potential improvement in patient care. The success of incision and drainage as a primary treatment

modality, coupled with the identified risk factors and presentation patterns, provides a foundation for evidence-based clinical protocols. The observed age-specific prevalence and clinical presentation patterns offer important guidance for targeted screening and early intervention strategies. The relatively low complication rates and favorable treatment outcomes suggest that standardized management protocols can effectively address this condition even in resource-limited settings. However, the observed recurrence rate indicated the need for careful follow-up and potentially modified treatment approaches in selected cases. The findings of this study contribute to a growing body of evidence supporting individualized treatment selection on the basis of patient characteristics and presentation patterns. Future research should address the identified limitations through prospective multicenter studies with standardized protocols and longer follow-up periods

CONFLICT OF INTEREST

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

AUTHOR CONTRIBUTIONS

Conceptualization, Methodology, Validation, Formal analysis, Investigation, Resources, Data Curation, Writing - Original Draft, Writing - Review & Editing, Visualization, Supervision: H.H.

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