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RESEARCH ARTICLE

MANAGEMENT OF BARTHOLIN CYST OR ABSCESS BY FOLEY'S CATHETER OR MARSUPIALIZATION: A RETROSPECTIVE COHORT STUDY

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ABSTRACT

Background and Objective: The Bartholin's gland cysts and abscesses are one of the most common vulva cyst or abscesses in gynaecological practice. Symptomatic cases have a negative impact on their quality of life. Surgical drainage using the Word catheter application or marsupialization is the treatment of choice in the management of Bartholin's gland abscess. The aim of the study was to compare the results of the patients who underwent Foley Catheter no. 8 or Marsupialization due to Bartholin cyst or abscesses. **Material and Methods:** A retrospective cohort study conducted in M.L.B. Medical College, Jhansi. All women aged above who suffered from Bartholin's gland abscess between the years 2014 and 2023 and were treated by means of the Foley's catheter no. 8 application or Marsupialization were included in the study. The surgical management is chosen according to each surgeon's preference. **Result:** Out of 186 women, 121 (65.05%) were treated by the Foley's catheter no. 8 application and 65 (34.95%) by Marsupialization. The mean age of the patients was 32.56±10.35yrs in the Marsupialization group and 30.10±11.33yrs in the Foley's catheter no. 8 group. E.coli was the most common pathogen 40.58% in the Foley's catheter no. 8 group while 26.47% in the Marsupialization group. Mean admission to discharge time in Foley Catheter no. 8 group 60-90 min in comparision to 24.5hr in Marsupialization group. **Conclusion:** Both the Word catheter application and marsupialization are appropriate and safe when treating Bartholin's gland abscess. The duration of hospital stay is shortened in Foley Catheter group.

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INTRODUCTION

The Bartholin glands grow at puberty before a gradual atrophy that begins in the third decade and continues with menopause. The glands are located bilaterally at the base of the labia minora and drain through 2- to 2.5-cm–long ducts that empty into the vestibule at about the 4 o'clock and 8 o'clock positions. The glands are usually the size of a pea and rarely exceed 1 cm. They are not palpable except in the presence of disease or infection. Obstruction of the distal Bartholin's duct may result in the retention of secretions, with resultant dilation of the duct and formation of a cyst. The cyst may become infected, and an abscess may develop in the gland. A Bartholin's duct cyst does not necessarily have to be present before a gland abscess develops.[1] A Bartholin's duct cyst may be asymptomatic if the cyst is small. A Bartholin's duct abscess may be primary (from bartholinitis) or secondary (from infection of Bartholin's cyst).[2] Two percent of women develop a Bartholin's duct cyst or gland abscess at some time in life.[3] Abscesses are almost three times more common than cysts.

Gradual involution of the Bartholin's glands can occur by the time a woman reaches 30 years of age.[4] This may account for the more frequent occurrence of Bartholin's duct cysts and gland abscesses during the reproductive years, especially between 20 and 29 years of age. The incidence of Bartholin's gland cancer is very low i.e. (0.114 cancers per 100,000 woman-years[5] but if diagnosis of cancer is delayed, the prognosis can be poor. Bartholin's glands usually shrink during menopause, a vulvar growth in a postmenopausal woman should be evaluated for malignancy, especially if the mass is irregular, nodular, and persistently indurated.[6] Treatment of the symptomatic Bartholin duct cyst or abscess also may be a challenging, demands time, anesthesia, and exposure. There are many options for treatment, including antibiotics and soaks, simple drainage, fistulization to create a new duct opening, Marsupialization, and excision of the gland. Destruction of the cyst or abscess base with silver nitrate or alcohol has also been used. Local, regional or general anesthesia is required during the Marsupialization procedure.

Differential Diagnosis of Cystic Vulvar Lesions[7,8]

Bartholin's duct cyst – usually unilateral and can be asymptomatic, it is vestibular in location and is soft and nontender.
Bartholin's gland abscess – unilateral and vestibular in location, it presents as a painful, erythematous and fluctuant lump.
Cyst of the canal of Nuck – a soft cyst found on the labia majora and mons pubis. It is caused by the entrapment of peritoneum in round ligament.
Epidermal inclusion cyst – found on the labia major and are mobile and non tender. It is caused by the obstruction of plosebaceous cyst.
Hydradenoma papilliforum – small nodules arising from apocrine sweat glands and are 0.23.0cm in diameter.
Mucous cyst of the vestibule – a small, superficial cysts <2cm found on the labia minora and vestibule.
Skene duct cyst – found proximal to urethral meatus in vestibule and can present in neonates.

The Word catheter is a 5.5 cm long, 15-French silicone device with a 3 cm long balloon, which is placed in the cyst or abscess to provide canal drainage and epithelialization. The procedure is a daycare which eliminates operation[9]. The recurrence rate is 2-25% for marsupilization, this rate is between 3% and 17% for a Word catheter in literature[9,10]. The goal of management is to preserve the gland and its function if possible.

AIMS AND OBJECTIVES

The aim of the study was to evaluate the results from the patients who underwent Foley Catheter no. 8 or Marsupialization due to Bartholin cyst or abscesses and also compare for recurrence rates. The study also compares the satisfaction levels of the patients.

MATERIALS AND METHODS

A retrospective cohort study conducted in Obstetrics & Gynecology department of M.L.B. Medical College, Jhansi, which covers the population of Bundelkhand region which consists of Uttarpradesh as well as Madhyapradesh. All women aged above who suffered from Bartholin's gland abscess between the years 2014 and 2023 and were treated by means of the Foley's catheter no. 8 application or Marsupialization were included in the study. The study design was approved by the Ethical committee of MLB Medical College, Jhansi. Patient's data were extracted from the records of department which includes the size of the Bartholin cysts or abscesses, their location, operation duration, and the presence or absence of recurrence. Some identified patients were asked how satisfied they were the treatment. Women managed expectantly, women drained by other means, women who were operated on during pregnancy, and those in whom pathologic tests revealed cancer were excluded from the study.

The surgical management of Bartholin's gland abscess is chosen according to each surgeon's preference, either by the Foley catheter no. 8 application or Marsupialization. All drained abscesses are cultured. During the study period, all patients were subject to uniform preoperative and postoperative care. Follow-up was usually done 2 to 3 weeks after the surgical procedure. In the Foley catheter no. 8 procedure, the infiltration of 2% lidocaine was followed by a 5 mm incision. The contents of the cyst or abscess were cleaned out. Then the Word catheter was placed, after being inflated with 3 mL saline solution, and one suture was placed. It was kept stationary for 4 weeks.

For Marsupialization, the patient was placed in the lithotomy position and 2% lidocaine was infiltrated to the skin lateral to hymen. The stabilization of the cyst manually followed by the opening of the cyst wall with a vertical incision about 1.5-2 cm long. The cyst was drained of its contents, cyst membrane was everted, and the cavity was washed with saline. The cyst wall was everted to the skin edge with 2-0 absorbable suture.

Statistical analysis: SPSS, version 25.0 (SPSS, Chicago, IL, USA) was used for analysis. Continuous variables were expressed as mean ± standard deviation, whereas categorical variables were expressed as percentages and frequencies. Chi-squared and Fisher's exact tests were used for categorical variables, t-test to compare independent variables with normal distribution. Statistical significance was assumed when $p \leq 0.05$.

RESULTS

During the study period, 186 women were managed surgically for Bartholin's gland abscess in department of Obs & Gyne of MLB Medical College, Jhansi. Of these, 121 (65.05%) were treated by the Foley's catheter no. 8 application and the remaining 65 (34.95%) by Marsupialization. The mean age of the patients was 32.56±10.35yrs in the Marsupialization group and 30.10±11.33yrs in the Foley's catheter no. 8 group (p=0.1475). The mean BMI in word catheter group was 23.5±3.2 while in Marsupialization group it was 24.4±3.5 which is non significant (p=0.0785). Bartholin cysts were present in 13 (20.0%) and abscess in 52 (80.0%) of the patients in the Marsupialization group while cyst in 35 (28.93%) patients and abscess in 86 patients (71.07%) in the Foley's catheter no. 8 group. In Foley's catheter no. 8 group, 69(57.0% cases were found to be positive for culture while in Marsupialization group 34(52.31%) cases were found to be positive culture (p=0.7963). Basic demographic data of the two groups were compared in Table 1. There was no significant difference between the groups in terms of demographic features.

The distribution of bacteria's drawn from positive cultures were shown in Table 2. In both the groups E.coli was the most common pathogen 40.58% in the Foley's catheter no. 8 group while 26.47% in the Marsupialization group. The values were not statistically significant (p = 0.4078). The distributions other bacterias were also not significant in both the groups. Only 2 cases (1.65%) fever was persists after the procedure in Foley Catheter no. 8 while 6 cases (9.23%) in Marsupialization group. Abscess recurrence was noted in both groups (3(2.48%) in Foley Catheter no. 8 vs 5 (7.70%) in Marsupialization group. The mean admission to surgery time was less in Foley Catheter no. 8 30-40 min compared to 9.98 hr in Marsupialization. The mean admission to discharge time also been shortened in Foley Catheter no. 8 group 60-90 min in comparision to 24.5hr in Marsupialization group (table 3).

DISCUSSION

Besides many options, treatment of the Bartholin cyst or abscess also depends upon the symptoms. Asymptomatic and small Bartholin cysts may not need any treatment, while large symptomatic cysts and abscesses need to be treated with surgical intervention. In this retrospective cohort study, marsupialization and Foley Catheter no. 8 treatments for Bartholin cyst or abscesses were compared.

Table No. 1. Demographic data of the patients who were managed by the Foley's catheter no. 8 application or Marsupialization

	Foley Catheter no. 8 (n = 121)	Marsupialization (n=65)	P value
Age (Yrs)	30.10±11.33	32.56±10.35	0.1500
BMI	23.5±3.2	24.4±3.5	0.0785
Cyst	35 (28.93%)	13 (20.0%)	0.3907
Abscess	86 (71.07%)	52 (80.0%)	0.6409
Antibiotics used	42 (34.71%)	24 (36.92%)	0.8812
Culture			
Negative	38 (31.41%)	24 (36.92%)	0.6472
Positive	69 (57.02%)	34 (52.31%)	0.7963
Not taken	14 (11.57%)	7 (10.77%)	1.000

Table No. 2. Bacteria recovered from Bartholin's gland abscess in cases of positive culture in patients

Bacteria	Foley Catheter no. 8 (n = 121)	Marsupialization (n=65)	P value
Gram negative bacilli			
E.coli	28 (40.58%)	9 (26.47%)	0.4078
Klebsiella	2 (2.99%)	1 (2.94%)	1.000
Gram positive cocci			
Staphylococcus aureus	7 (7.25%)	3 (8.82%)	1.000
Streptococcus pneumonia	2 (2.99%)	3 (8.82%)	0.3360
Streptococcus agalactiae	5 (7.25%)	3 (8.82%)	1.000
Enterococcus	6 (8.71%)	5 (14.71%)	0.5067
Candida	2 (2.99%)	1 (2.94%)	1.000
Anaerobic bacteria	14 (20.29%)	4 (11.76%)	0.4230
Other	3 (8.71%)	5 (14.71%)	0.1264

Table No. 3. Postoperative parameters

Parameters	Foley's Catheter no. 8 (n = 121	Marsupialization (n=65)
Fever after procedure	2 (1.65%)	6 (9.23%)
Abscess recurrence	3 (2.48%)	5 (7.70%)
Mean admission to surgery interval	30-40 min	9.98 hr
Mean admission to discharge interval	60-90 min	24.5 hr

The mean age of the patients was 32.56±10.35yrs in the Marsupialization group and 30.10±11.33yrs in the Foley Catheter no. 8 group which shows the commonest age of presentation was around 30 yrs. Our results agrees with the result of Anozie OB et al[11] and Bhide, A. et al[12] who found mean age of 28.8 ± 5.6 years and 27.74 ± 6.65 years. The positive culture rates in both the groups were (57.02%) and (52.31%) which is quite similar to the study by Kesus et al[13] who demonstrated positive cultures in 60% of patients. Diagnosis was clinical while a positive microbial culture was evident in majority of the cases. Escherichia coli was the predominant isolate constituting 40.58% in Foley's Catheter no. 8 and 26.47% in marsupialization group. Our results are consistent to the results of Anozie OBet al[12] who found E.coli in 88.9% of cases. Traditionally, marsupialization is performed to optimize drainage[14] by given incision and suturing which may result to scarring and dyspareunia. Hence we perform large no. of cases by word catheter rather than marsupialization (121 vs 65 cases). Now a-days insertion of the Word catheter has become more popular, given its "minimally invasive" nature and the assumption that a smaller incision may heal better. In our study after Foley Catheter no. 8 procedure, only 1.65% cases persists fever in comparison to marsupialization group in which 9.23% cases had fever after procedure. Recurrence was found in 2.48% of cases in Foley Catheter no. 8 and 7.70% in marsupialization. Similar recurrence was found by Philipp Reif et al[15] who found recurrence of abscess in 3.8% in patients who treated by word catheter. Mean admission to surgery interval was very shorter 30-40 min in Foley Catheter no. 8 in comparison to marsupialization group (9.98 hr) and mean admission to discharge interval was 60-90 min in Foley Catheter no. 8 group which is very less while comparing to marsupialization in which admission to discharge interval was 24.5 hr. In addition, the Foley Catheter no. 8 application may be performed in an outpatient setting, easing the in-hospital load and costs[15], and perhaps it is associated with a faster recovery than marsupialization.

CONCLUSION

Treatment of Bartholin cyst or abscess by both Foley Catheter no. 8 and Marsupialization resulted in similar result. Outpatient placement of a Foley Catheter no. 8 is also well tolerated by patients. Our study favour's the treatment of Bartholin cyst or abscess with a Foley Catheter no. 8 because it is a fastest procedure, relieving pain sooner after diagnoses and cost effective in comparision to Marsupialization.

Conflict of interest: Nil

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