

# Marsupialization versus Word catheter in the treatment of Bartholin cyst or abscess: retrospective cohort study

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## Abstract

**Objective:** Bartholin cysts or abscesses are observed in approximately 2% of women, usually in their reproductive years. Although none of the treatments appear to be superior, there are several options including drainage with basic incision, Word catheter application, marsupialization, silver nitrate application, and excision. The primary outcome in this study was to evaluate the recurrence rates in patients who underwent marsupialization or Word catheter for the treatment of Bartholin cyst or abscesses, and the secondary outcome was to evaluate the rates of patient satisfaction.

**Material and Methods:** A total of 196 patients who underwent either Word catheterization or marsupialization for the treatment of Bartholin cyst or abscesses between 2014 and 2017 were included in this retrospective cohort study. The size and location of the cyst/abscess, the operation duration, and the recurrence was recorded. A 5-point visual analog scale (VAS) was used to assess patient satisfaction and whether patients would recommend their treatment to others.

**Results:** Recurrence was observed in 11 (8.3%) patients in the marsupialization group, and 12 (18.8%) patients in the Word catheter group ( $p=0.034$ ). Median (range) VAS scores in the marsupialization group were better than the Word catheter group [4 (1-5) vs 3 (1-5);  $p<0.001$ ].

**Conclusion:** Higher recurrence rate and dissatisfaction level were found in the Word catheter group. The only advantage of using Word catheter was its short operation time. These results appear to show that marsupialization should be the first-line treatment for Bartholin cysts and abscesses. However, the small number of cases and the retrospective nature of this study mean that larger, prospective studies are required to support this hypothesis. (J Turk Ger Gynecol Assoc 2022; 23: 71-4)

**Keywords:** Bartholin abscess, Bartholin cyst, recurrence, patient satisfaction

**Received:** 26 January, 2022 **Accepted:** 20 March, 2022

## Introduction

Bartholin cyst is a swelling resulting from mucus build-up located at the 4- and 8-o'clock positions of the vulvar vestibule. If the same swelling is accompanied by signs of infection or inflammation such as redness, swelling, hotness, and tenderness, it is described as an abscess (1). Bartholin cysts or abscess are observed in around 2% of women, generally in their reproductive period (2). Several management options are available for Bartholin cysts, including drainage with basic incision, Word catheter, marsupialization, silver nitrate application or excision (3). In the marsupialization procedure,

to provide drainage from the glands and to prevent scar formation, a 1.5-3 cm long incision is made in the cyst/abscess. After performing drainage to prevent the closure or formation of a new cyst, the cyst capsule is sutured to the edge, which is fixed to the outer side, and re-epithelialization ultimately occurs (4). Local, regional or general anesthesia is required during the marsupialization procedure.

An alternative treatment is the Word catheter. 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. This procedure eliminates the requirement for an operation (2). It can be performed as



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Journal of the Turkish-German Gynecological Association published by Galenos Publishing House.

DOI: 10.4274/jtgga.galenos.2022.2022-1-6

a day case. However, its location should not change while providing drainage for approximately 4 to 6 weeks. (2). In the literature, the recurrence rates reported for both approaches are very variable. While the recurrence rate is 2-25% for marsupialization, this rate is between 3% and 17% for a Word catheter (2,3).

### Objective

The aim of this study was to compare the results obtained from the patients who underwent marsupialization or Word catheter due to Bartholin cyst or abscesses. The primary outcome of the study was to compare the recurrence rates, and the secondary outcome was to compare the satisfaction levels of the patients.

### Material and Methods

In this retrospective cohort study, all patients were included who underwent marsupialization or Word catheter for Bartholin cyst or abscess in our hospitals between 2016 and 2021. The study design was approved by the Acıbadem Mehmet Ali Aydınlar University Ethics Committee (approval number: 2021-20/28).

Patients data were extracted from health records, including contact information. Clinical data included the size of the Bartholin cysts or abscesses, their location, operation duration, and the presence or absence of recurrence. Identified patients were asked how satisfied they were the treatment and whether they would recommend this treatment to others via survey. The responses were recorded.

Exclusion criteria were patients without current contact information and patients undergoing any other treatment for Bartholin cyst or abscess, other than marsupialization or Word catheter.

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 (polyglactin 910).

In the Word catheter 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 (Cook Medical Inc, Bloomington, IN, USA) was placed, after being inflated with 3 mL saline solution, and one suture was placed. It was kept stationary for 4 weeks.

All patients were interviewed about their overall discomfort levels, evaluated using a 5-point visual analog scale (VAS). The categories were: 1, poor/very difficult; 2, sufficient/moderately difficult; 3, medium/average difficulty; 4, good/easy; and 5, excellent/very easy. Finally, patients were asked if they would recommend their surgery type to other patients undergoing the same procedure.

### Statistical analysis

SPSS, version 25.0 (SPSS, Chicago, IL, USA) was used for analysis. Continuous variables were expressed as mean  $\pm$  standard deviation, median (range), whereas categorical variables were expressed as percentages and frequencies. The Shapiro-Wilk test was used to assess the equality of variance of the data. Chi-squared and Fisher's exact tests were used for categorical variables, t-test to compare independent variables with normal distribution, and Mann-Whitney U test to compare independent variables with abnormal distribution. Kaplan-Meier curves were constructed to present the time to recurrence of the cyst or abscess and log-rank test was used to test differences in time to recurrence. Statistical significance was assumed when  $p \leq 0.05$ .

### Results

A total of 196 patients were included, of whom 132 (67.3%) underwent marsupialization and 64 (32.7%) underwent Word catheterization. The mean age of the patients was  $37.29 \pm 10.37$  in the marsupialization group and  $36.10 \pm 11.26$  in the Word catheter group ( $p=0.297$ ). Basic demographic data of the two

**Table 1. Demographic data of the groups**

	Marsupialization (n=132)	Word catheter (n=64)	p
Gravida*	2 (0-5)	2 (1-5)	0.675
Parity*	2 (0-4)	2 (1-4)	0.069
Age (years)*	$37.29 \pm 10.37$	$36.10 \pm 11.26$	0.297
Body mass index (kg/m <sup>2</sup> )*	$24.4 \pm 3.9$	$23.8 \pm 3.2$	0.394
Menopause (+), (%)	22 (16.7)	8 (12.5)	0.447
*Menopause length (years) n	$3.39 \pm 3.40$	$5.6 \pm 8.53$	0.544
Chronic disease (+) n, (%)	19 (14.4)	4 (6.31)	0.129
Previous operation (+) n, (%)	26 (19.7)	21 (32.8)	0.078
*Values are given as mean $\pm$ standard deviation or median (minimum-maximum)			

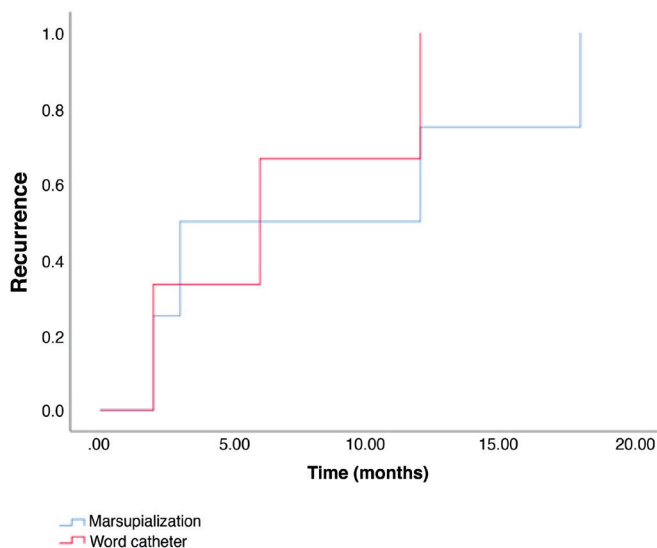
groups were compared in Table 1. There was no significant difference between the groups in terms of demographic features.

Bartholin cysts were present in 104 (78.8%) and abscess in 28 (21.2%) of the patients in the marsupialization group while cyst in 47 (73.4%) patients and abscess in 17 patients (26.6%) in the Word catheter group ( $p=0.404$ ).

While 60 (45.5%) of the cyst-abscesses in the marsupialization group were on the right and 2 (1.5%) were bilateral, in the Word catheter group 24 (37.5%) were on the right and 2 (3.1%) were bilateral. The mean cyst-abscess size was  $3.66\pm 1.21$  cm in the marsupialization group and  $3.65\pm 0.73$  cm in the Word catheter group. The location and size of the cysts were similar between the two groups ( $p=0.473$  and  $p=0.146$ , respectively).

The mean operation time was significantly shorter in the Word catheter group ( $15.85\pm 2.88$  min), compared to the marsupialization group ( $21.67\pm 4.87$  min) ( $p=0.001$ ). Postoperative complications was observed in 7 (5.3%) patients in the marsupialization group and 2 (3.1%) patients in the Word catheter group ( $p=0.495$ ). All of the complications were postoperative infection.

A total of 11 patients (8.3%) in the marsupialization group and 12 patients in the Word catheter group (18.8%) had recurrence ( $p=0.034$ ). The recurrence interval was  $7.27\pm 6.46$  months for the marsupialization group and  $5.58\pm 3.34$  months for the Word catheter group. The time interval to recurrence of the groups after the operation is shown in Figure 1 (log-rank test,  $p=0.543$ ). Ten patients with recurrence in the marsupialization group were treated with cystectomy and 1 patient with antibiotics. Nine patients with recurrence in the Word catheter group underwent cystectomy and 3 had antibiotic treatment ( $p=0.660$ ).



**Figure 1. Kaplan-Meier curve for time to recurrence of the Bartholin cyst or abscess after treatment**

The patient satisfaction was assessed with the postoperative VAS scale. The median (range) VAS scores (score: 4 minimum: 1, maximum: 5) in the marsupialization group were 4 (1-5) and were significantly better than those reported by patients in the Word catheter group with a median (range) score of 3 (1-5) ( $p<0.001$ ). When patients were asked if they would recommend this surgical procedure to other patients, 12 (9.1%) patients in the marsupialization group and 13 (20.3%) patients in the Word catheter group responded negatively ( $p=0.027$ ). In the marsupialization group, dissatisfaction was caused in 4 out of 12 (33.3%) by recurrence and in 8 out of 12 (66.7%) by pain. In the Word catheter group, the causes of dissatisfaction were length of treatment in 8 (61.5%), recurrence in 4 (30.8%) and pain in 1 (7.7%) ( $p=0.001$ ).

## Discussion

In this retrospective cohort study, marsupialization and Word catheter treatments for Bartholin cyst or abscesses were compared. Our primary outcome was to compare the recurrence rates. Similar to the reported literature, the recurrence rate was 8.3% in the marsupialization group and 18.8% in the Word catheter group. Although the recurrence rates, and the pain scores were investigated and the average treatment cost was evaluated in previous studies there has not been any current study which compares the patients' comfort and satisfaction (5-7).

Treatment of the Bartholin cyst or abscess also depends upon the symptoms. There are many treatment options, including medical treatment, simple drainage, destruction with silver nitrate or alcohol, Word catheter, marsupialization, and excision of the gland. Asymptomatic and small Bartholin cysts may not need any treatment, while large symptomatic cysts and abscesses need to be treated with surgical intervention.

Incision and drainage is a simple and quick method of providing relief. However, this method is prone to recurrence of cyst or abscess formation (8). The most important issue in the selection of treatment methods is the recurrence rate and it differs by the initial type of management.

Recurrence rates are not very clear in the literature. Recurrence rates for Bartholin duct cysts or gland abscesses after Word catheter compared with marsupialization are reported to range from 2% to 17% and 3% to 25%, respectively (2,9).

Kroese et al. (5) found that the pain scores were higher for the Word catheter compared to marsupialization and they did not observe significant difference in the recurrence rates. Reif et al. (6) suggested that Word catheter has acceptable recurrence rates and it is a low-cost procedure. However, we detected noticeably higher patient satisfaction in the marsupialization group in our study.

The secondary outcome was to compare the satisfaction levels of the patients. When they were asked whether they would recommend this surgical application to other patients, there was a significant difference in satisfaction with patients in the Word catheter group being more dissatisfied. The main reason for this was the length of the treatment and the high rate of the recurrence.

## Conclusion

In conclusion, recurrence rate and patient dissatisfaction were greater in the Word catheter group. The only advantage of the Word catheter application was its short operation time, which only differed by a median of around eight minutes. Thus we suggest that marsupialization should be the first-line treatment for Bartholin cysts or abscesses.

**Ethical Committee Approval:** Before the study, the approval form was taken from the Local Ethics Committee of Acıbadem Mehmet Ali Aydınlar University (approval number: 2021-20/28).

**Informed Consent:** It was obtained from all participants.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Surgical and Medical Practices: E.K.; Concept: E.K.; Design: E.K.; Data Collection or Processing: E.K., E.G.A.; Analysis or Interpretation: E.K.; Literature Search: E.K., E.G.A.; Writing: E.K.

**Conflict of Interest:** No conflict of interest is declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

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