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ORIGINAL ARTICLE

Effects of the treatment modalities in Bartholin's abscess

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ABSTRACT

BACKGROUND: Bartholin's abscess is a gynecological pathology commonly observed in the reproductive period. The etiology attributes this pathology to a wide range of factors. Even though there is more than one treatment option, there has yet to emerge a consensus regarding the ideal method. The present study aims to present patients operated on due to the presence of Bartholin's abscess.

METHODS: The data pertaining to 15 patients that had applied to our clinic with various complaints and had been subject to silver nitrate treatment upon the diagnosis of Bartholin's abscess (Group 1) and to 21 patients that had been subject to surgical excision after the same diagnosis (Group 2) were reviewed retrospectively. The review was followed by the recording of age, gravidity, parity, presenting symptoms, mass sizes and locations, operative durations, and observed complications of the patients. The data thus compiled were evaluated through statistical analyses.

RESULTS: In the specified timeframe, 36 patients were observed to have been operated upon, 15 patients to have been subject to silver nitrate treatment (Group 1) and 21 patients to have been subject to surgical excision (Group 2). All operated patients were in the reproductive period. Mass locations tended to be in the right side in both groups (93.3% and 90.5%). No statistically significant difference was observed between the operated groups in mass sizes ($P=0.892$). The operative durations were significantly shorter among patients in Group 1 ($P=0.001$). Any increase in mass size and operative duration was observed to increase the risk of complications.

CONCLUSIONS: Increased mass size and extended operative duration are the two most important risk factors in the emergence of complications. It should be kept in mind that an effective course of treatment can be secured with minimum side effects through the performance of the operation in the shortest duration possible and with the use of suitable techniques. We are of the opinion that appropriate results can be achieved upon the consideration of minimally invasive treatment modalities in all aspects.

(Cite this article as: Başaranoğlu S, Ağaçayak E, Deregözü A, Karaköse Y, Acet M, Koyuncu D, et al. Effects of the treatment modalities in Bartholin's abscess. *Chirurgia* 2016;29:190-4)

Key words: Bartholin's glands - Silver nitrate - Operative surgical procedure.

Bartholin's glands are a couple of glands that are situated in right and left posterolateral sides at the vaginal opening. The glands open to the vagina through a duct with a length of approximately 1.5 to 2 cm at approximately the 4 and 8 o'clock positions at the hymenal ring. It serves such functions as the secretion of mucous that maintains the moistness of the vulvar area and provides for lubrication following sexual stimulation during intercourse. Bartholin's glands are too small to be palpated

during regular gynecological examination. If the channel has been blocked for any reason, a cyst is formed due to mucosal retention, and this cyst leads to the emergence of Bartholin's abscess if this cyst has been infected with aerobic and anaerobic bacteria present in the vaginal or cervical flora.² Due to its frequent observation in gynecological practices, it is estimated to occur in 2% of all women even though this percentage is not definitive. Ductal blockage may be attributed to various factors. The most

common ones among these are infectious reasons (aerobic and anaerobic bacteria) whereas such occurrence may also be caused by vaginal surgical interventions (medialateral episiotomy, posterior colporrhaphy, etc.) or congenital stenosis.⁵ It should be noted that ductal blockage might be associated with malignancy in cases developing in the post-menopausal period. Even though there are a number of treatment methods available for patients with Bartholin's abscess, there are differences of opinion with respect to the ideal medical approach. Although such methods as word catheter placement, alcohol sclerotherapy, CO₂ laser vaporization, or silver nitrate use are less invasive and more effective, conventional treatment modalities including surgical excision or marsupialization still stand as the most frequently used methods.^{6,7} The present study aims to present demographic data, presenting complaints, mass sizes and locations, invasive procedures implemented, and developing complications with respect to patients that presented to the clinic by reason of the presence of Bartholin's abscess.

Materials and methods

The present study was conducted at the Departments of Obstetrics and Gynecology of Fatih University School of Medicine and Dicle University School of Medicine between March 2010 and September 2015. The approval of the Dicle University Ethics Board for Clinical Research was sought and obtained before writing of the paper. Thirty-six patients that had been operated on due to the pre-diagnosis of vulvar mass and whose final pathological results had been reported as the presence of Bartholin's abscess were analyzed retrospectively. Records were prepared of the demographic data including age, gravidity and parity of the patients, as well as their presenting complaints. Pre-operative mass locations and sizes, type and duration of surgical procedures, and complications developing in the intra- and post-operative periods were noted.

Out of 36 patients that had been operated on due to the presence of Bartholin's abscess, 15 were identified to have been subject to the insertion of silver nitrate sticks (Group 1) and 21 to have been subject to surgical excision (Group 2). It was observed that the patients in Group 1 had been discharged from the hospital upon a 30-minute rest and those in Group 2 had been discharged on the same day.

Surgical technique

SILVER NITRATE APPLICATION

The patients were taken onto the gynecological examination couch and then made subject to vulvar-vaginal cleaning with povidone-iodine (Batticon) in the lithotomy position. To secure local anesthesia in the region involved by the mass, 40 mg of lidocaine HCL (Jetokain/ADEKA İlaç Sanayi ve Ticaret A.Ş. — Medicine Industry and Trade Co. -SAMSUN) was injected at the point of drainage. Patients considered subjectively to have achieved analgesia were then taken into the procedure. An incision of 1 to 1.5 cm in length was opened on the frontal part of the hymenal ring at a vertical axis to the vulva in such a manner as to coincide with the top of the cyst or abscess and was used to drain the contents therein. Following full drainage, a silver nitrate stick of 0.5 cm in length was inserted into the cavity. The incision was closed through the use of no. 1 silk sutures. The patients were made subject to the suitable antibiotherapy and analgesic treatment following the procedure. Seventy-two hours after the intervention, the patients were called back for control examination and the sutures were removed. The cyst or abscess wall was held through the application of slight traction and was totally removed from the point of incision. The necrotic tissues were debrided from the cavity. Depending on the size of the abscess, 2/0 absorbable sutures were placed in the cavity and the procedure was concluded with the removal of the dermal sutures.

EXCISION

Vulva and vagina were cleaned with povidone-iodine (Batticon) in the lithotomy position following spinal or general anesthesia. A vertical excision was opened on the skin in the vulvar region with a size that matches the mass size in such a manner as to coincide with the top of the cyst or abscess from the front part of the hymenal ring. The abscess focus was totally removed through a blunt and sharp dissection without drainage. The remaining necrotic gaps were brought closer with 2/0 absorbable sutures depending on the size of the abscess. The procedure was completed with the subcuticular closing of the skin. The patients were discharged upon the initiation of suitable antibiotherapy and analgesic treatment on the same day as the operation.

Statistical analysis

The data were evaluated by SPSS (Statistical Package for Social Sciences) v.15.0 for Windows (SPSS Inc., Chicago, IL, USA), Epi info and Microsoft Excel. The student *t*-test was conducted for the comparison of the two groups. A review was performed with the Kolmogorov-Smirnov test to establish whether or not numeric data exhibited a normal distribution, and those that did not match the normal distribution were made subject to the Mann-Whitney U test. With the aim of identifying the reasons underlying the emergence of complications, a Pearson correlation analysis was performed, and a linear regression analysis was applied to determine the factors with the highest influence. Results in the confidence interval of 95% and with $P < 0.05$ were considered statistically significant.

Results

In the specified timeframe, 36 patients were observed to have been operated on, 15 patients to have been subject to silver nitrate treatment (Group 1) and 21 patients to have been subject to surgical excision (Group 2) in the scope of the retrospectively planned present study. Demographic data including gravidity and parity of the groups and their presenting complaints are demonstrated in Table I. All operated patients were observed to be in the reproductive period and not in the premenarchal or menopausal period. Two of the patients in Group 1 and one of the patients in Group 2 were virgins. Operational findings such as mass locations and sizes and operative durations of operated patients and the complications observed intra- or postoperatively are demonstrated in Table II. Mass locations tended to be in the

TABLE I.—Demographic data of patients from Group 1 and Group 2.

	Group 1 (N.=15)	Group 2 (N.=21)
Age	27.8±6.7	29.2±6.8
Gravidity	1.6±1.8	1.8±1.7
Parity	1.5±1.7	1.5±1.5
Presenting symptoms	N. (%)	N. (%)
Asymptomatic	0	1 (4.8%)
Palpable mass	2 (13.3%)	3 (14.3%)
Pain	9 (60%)	13 (61.9%)
Dyspareunia	2 (13.3%)	2 (9.5%)
Feeling fullness/pressured	1 (6.7%)	1 (4.8%)
Walking/sitting disability	1 (6.7%)	1 (4.8%)

TABLE II.—The results of surgical processing.

	Group 1 (N.=15)	Group 2 (N.=21)
Localization		
Right	14 (93.3%)	19 (90.5%)
Left	1 (6.7%)	2 (9.5%)
Size (cm)	40.8±11.3	43.1±11.5
Operation time (min)	5.7±1.5	21.7±4.6
Intra- and postoperative complications	N. (%)	N. (%)
No complication	12 (80%)	16 (76.2%)
Recurrence	0	1 (4.8%)
Hemorrhage	1 (6.7%)	1 (4.8%)
Ulceration	1 (6.7%)	0
Continous pain	1 (6.7%)	2 (9.5%)
Feeling of tension	0	1 (4.8%)

right side in both groups (93.3% in Group 1 and 90.5% in Group 2). No statistically significant difference was observed between the groups in mass sizes ($P=0.892$). The comparison of the groups in terms of operative durations yielded the observation that the operative durations in Group 1 were shorter than those seen in Group 2 and this difference was statistically significant ($P=0.001$). Any increase in mass size and operative duration in both groups was observed to increase the risk of complications (Figure 1).

Discussion

Bartholin's abscess represents a clinical phenomenon that reduces the quality of life of patients in the reproductive period. Different countries report difference incidences. A population-based study undertaken in Korea specified the incidence of Bartholin's cyst as 0.55 ± 0.04 per mil and of Bartholin's abscess as 0.95 ± 0.06 per mil.¹ This phenomenon is observed in 2% of all women that present to clinics for gynecological reasons every year. A number of patients are asymptomatic and the presence of the abscess is noticed during gynecological examination. The most common complaints include pain, dyspareunia, perceived swelling during sitting or walking, presence of palpable mass, or sexual dysfunctions.² The most common presenting complaint among the cases included in the study was observed to be pain (Group 1: 9/15 (60%) and Group 2: 13/21 (61.9%), followed by dyspareunia and palpable mass. The most common causes of blockage of the Bartholin's gland are infectious reasons (aerobic and anaerobic bacteria)

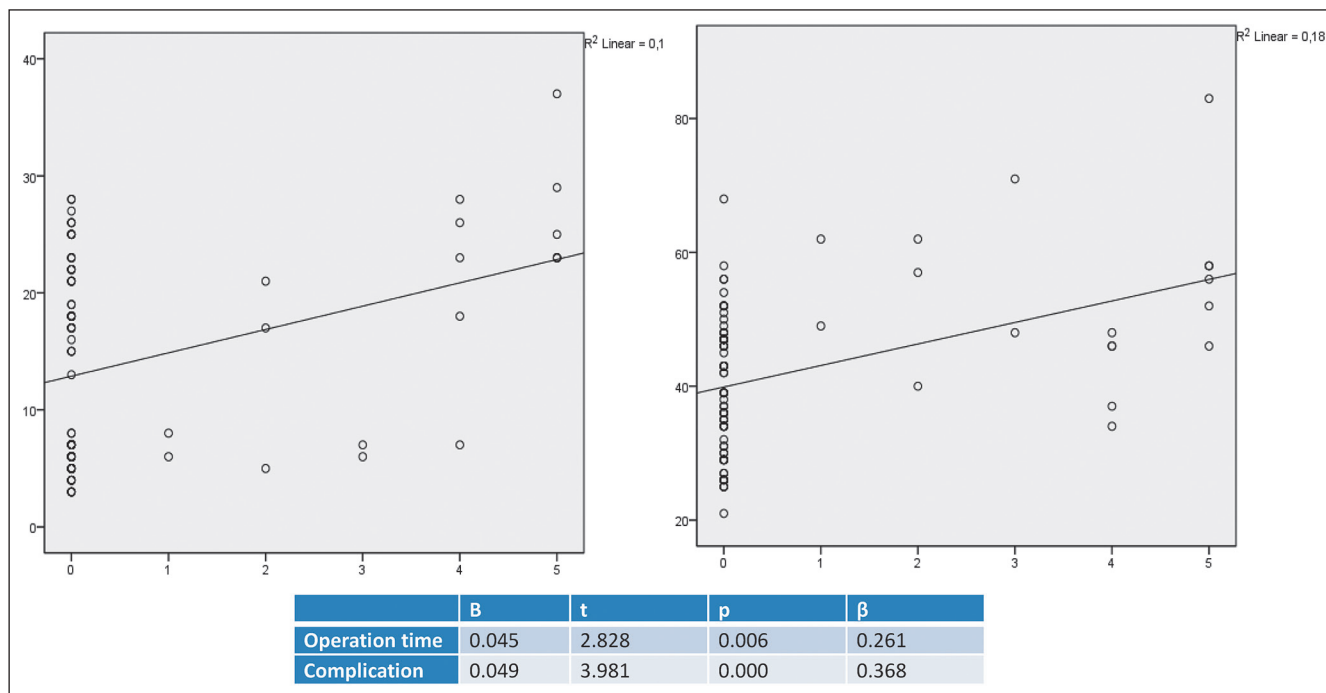


Figure 1.—Relation between operation time and complications, and between cyst size and complications.

whereas such occurrence may also be caused by vaginal surgical interventions (mediolateral episiotomy, posterior colporrhaphy, etc.) or congenital stenosis. Operated patients were not made subject to routine culturing of cyst contents and were put on broad-spectrum antibiotic treatment. Even though Bartholin's abscess is frequently observed in the reproductive period, it can also occur in the premenarchal or menopausal period. Specifically, patients that give way to the consideration of Bartholin's abscess in the post-menopausal period must also be addressed for the possibility of malignancy. A review of the post-operative pathological results indicated that they had been reported as pointing out to Bartholin's abscess and no finding of malignancy had been identified. The mean ages of the patients included in the present study were 27.8 ± 6.7 and 29.2 ± 6.8 , respectively. All patients were observed to be in the reproductive period and not in the premenarchal or menopausal period. Although conventional surgical methods provide for a lower rate of relapse and a higher level of successful treatment, their risks of diminished quality of life and increased invasive procedural risks paved the way for the development of minimally invasive techniques. To-

day, silver nitrate sticks, alcohol sclerotherapy, Word catheter insertion or carbon dioxide (CO₂) laser vaporization are used in the course of treatment as minimally invasive techniques.⁸ Although the phenomenon is observed rather frequently in practice, there has still yet to emerge a standard for its treatment. In modern practices, the insertion of a Word catheter is employed as a safe and effective method by reason of its low rate of recurrence and low number of side effects. However, the catheter also brings with it certain disadvantages including the procedure of its insertion, its risk of falling out, or the irritation it may cause. Utilized as another alternative modality of treatment, CO₂ laser vaporization technique stands out as a minimally invasive option, but is still not used as a standard modality of treatment due to its high rates of recurrence, failure to bring forth total healing and need for a high number of visits to the polyclinic for the patient.^{6,9} The present study included patients that had been subject to the use of silver nitrate sticks and the performance of surgical excision. Other treatment groups were excluded from the study by reason of their limitations in terms of experience. Although the use of surgical excision increases curative chances,

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it was reported in the literature to lead to post-operative complications or complaints at rates up to 24%. These frequently include hemorrhage, infected suture line, damage to peripheral tissues, cosmetic problems, dyspareunia, decreased vaginal lubrication, or pain along the scar line. The follow-up of 21 patients that had been subject to excision demonstrated that 16 patients (76.2%) exhibited no post-operative problems whereas one patient (4.8%) showed intra-operative hemorrhage. Furthermore, one patient reported a sense of tightness (4.8%) and 2 a feeling of constant pain (9.5%). On the other hand, the consideration of 15 patients that had been subject to the insertion of silver nitrate sticks indicated that 12 patients reported no problems (80%), one patient exhibited chemical ulceration accompanied by vulvar edema and hyperemia (6.7%), one patient exhibited hemorrhage (6.7%), and one patient exhibited constant pain (6.7%). In Turkey, Özdeğirmenci *et al.* compared the insertion of silver nitrate to surgical excision and reported that both groups obtained similar results and that scar formation was at a lesser degree in the silver nitrate group ($P=0.007$).⁷ Considering both groups in the present study, the use of the silver nitrate stick can be stated to provide for a higher rate of success and a more suitable profile in terms of side effects. In addition, the emerging complications were observed to have been caused by operative durations and mass sizes as the most important reasons. Whereas the insertion of a silver nitrate stick is a procedure that can be implemented under the conditions of a polyclinic and does not require hospitalization, surgical excision stands out as a procedure that requires anesthesia and hospitalization. In the present study, the operative duration was 5.7 ± 1.5 minutes. for the patients in Group 1 whereas the same duration was 21.7 ± 4.6 minutes. for the patients in Group 2 ($P=0.001$).

Conclusions

Increased mass size and extended operative duration were established as the two most important risk factors

in the emergence of complications. We are of the opinion that emerging complications stem from the failure to ensure dissection and saturation in such a manner as to match the respective anatomical structure, the use of unfit suture materials, and the placement of silver nitrate sticks in contact with the skin, and such complications increase the side effects observed following relevant procedures. It should be kept in mind that an effective course of treatment can be secured with minimum side effects through the performance of the operation in the shortest duration possible and with the use of suitable techniques. In the light of the literature, the use of silver nitrate insertion is regarded to be more advantageous and effective when considered in the scope of available treatment modalities. However, we are of the opinion that appropriate results can be achieved upon the consideration of minimally invasive treatment modalities in all aspects.

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Conflicts of interest.—The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript. Manuscript accepted: April 12, 2016. - Manuscript received: November 25, 2015.