Panuciak, Kinga, Mastalerczyk, Angelika, Nowicka, Emilia, Makowska, Karolina, Obel, Michal, Lejman, Jan, Czyżak, Kamila, Wiśniewski, Wiktor. Abscesses and cysts of Bartholin's gland - contemporary problems of active women. Journal of Education, Health and Sport. 2022;12(11):257-266. eISSN 2391-8306. DOI http://dx.doi.org/10.12775/JEHS.2022.12.11.033
https://apcz.umk.pl/JEHS/article/view/39901
https://zenodo.org/record/7296436

The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021. No. 32343.
Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical Culture Sciences (Field of Medical sciences and health sciences); Health Sciences (Field of Medical Sciences and Health Sciences).
Punkty Ministerialne z 2019 - aktualny rok 40 punktów. Załącznik do komunikatu Ministra Edukacji i Nauki z dnia 21 grudnia 2021 r. Lp. 32343. Posiada Unikatowy Identyfikator Czasopisma: 201159.
Przypisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu).

The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 09.09.2022. Revised: 20.10.2022. Accepted: 04.11.2022.

Abscesses and cysts of Bartholin's gland - contemporary problems of active women

Affiliation:

Kinga Panuciak [1] kinga.panuciak26@gmail.com; https://orcid.org/0000-0001-9014-5171

Angelika Mastalerczyk [1,2] ngmastaler@gmail.com; https://orcid.org/0000-0002-7576-2152

Emilia Nowicka [1] e.nowicka22@gmail.com; https://orcid.org/0000-0002-2743-1551

Karolina Makowska [1] makowska.karolinaa@gmail.com; https://orcid.org/0000-0001-5467-3137

Michał Obel [3] michalobel3@gmail.com; https://orcid.org/0000-0003-1237-8732

Jan Lejman [1], lejmjan@gmail.com; https://orcid.org/0000-0002-8065-2839

Kamila Czyżak [3] kamilacz1905@gmail.com; https://orcid.org/0000-0002-8866-5810

Wiktor Wiśniewski [4] victor.wisniewsky4@gmail.com; https://orcid.org/0000-0001-5845-8012

1. Student Scientific Society, Independent Laboratory of Genetic Diagnostics, Medical University of Lublin, A. Racławickie 1, 20-059 Lublin, Poland
2. Student Scientific Society ISOMERS, Department of Medicinal Chemistry, Medical University of Lublin, Chodźki Street 4A, 20-093 Lublin, Poland
3. Student Scientific Association at the Department of Endocrinology, Medical University of Lublin, Chodźki Street 19, 20-093 Lublin, Poland
4. EMC Clinic, Łowiecka Street 24, 50-220 Wrocław, Poland

Abstract

Introduction and purpose:

Bartholin's glands are paired structures, playing a significant role in lubricating the vagina through the production of mucus. They are physiologically undetectable, but when their ducts are clogged, the accumulating secretion can lead to various pathologies. The most common are cysts and abscesses, the symptomatic conditions of which are the causes of nearly 2% of gynecological visits annually. Statistically, they most frequently occur in women of childbearing age, however, young age is not a rule. The aim of the study is to summarize the state of knowledge about Bartholin's gland cysts and abscesses, with an indication of the currently used therapies.

State of knowledge:

In some cases, the course of these pathologies can be asymptomatic, however, the rest of the patients may experience unpleasant symptoms and require treatment. During diagnostics, it is important to carefully collect an interview and conduct a physical examination, because in most cases on this basis it is possible to make an accurate diagnosis. However, in case of doubt, imaging tests can also be used. There may be times when patients with asymptomatic cysts may not require treatment. Nevertheless, choosing the right therapy is sometimes challenging for the clinician due to the potential risk of symptoms recurring.

Conclusion:

Although there are many different treatments available, the most commonly used appears to be marsupialization or incision and drainage with Word catheter placement. Additionally, an increasing number of articles devoted to the use of the CO2 laser can also be observed, but even it has its drawbacks. For this reason, there is still a need for further research into new methods of treatment that would ensure both good results and high comfort for the patients.

Keywords: Bartholin’s Gland; cysts; abscesses, cancer; gynecology

Introduction and purpose:

Bartholin's glands are paired oval structures with an average size of 0.5 cm, which play a significant role in moisturizing the vagina through the production of mucus. Their name comes from the Danish anatomist Caspar Bartholin, who first described their occurrence in the 17th century [1]. In the context of men, they are homologous to their Cowper Glands [2]. They are

located in the posterior part of the vaginal opening, laterally from the bulbocavernous muscle. Their secretions drain through the ducts that enter the atrium around 4 and 8 o'clock. For this reason, they are often referred to as larger vestibular glands [1,3,4].

Generally, they are undetectable under physiological conditions, but when they become clogged, they can lead to cysts or abscesses. The cyst itself is a benign Bartholin gland blockage, which, occurs mostly unilaterally. Its occurrence may be predisposed by trauma, childbirth or an episiotomy. There are also cases when its causes cannot be identified [5]. The aim of the study is to summarize the state of knowledge about Bartholin's gland cysts and abscesses, with an indication of the currently used therapies.

Description of the state of knowledge:

Epidemiology:

Both cysts and abscesses of the Bartholin's gland are most common in women of childbearing age, especially between the ages of 20 and 29. It is estimated that their symptomatic states are responsible for approx. 2% of gynecological visits annually [3,6-9].

However, these cysts also happen among other groups. Cevik et al. described the case of a 2-day-old female newborn in whom the cyst was accompanied by hydronephrosis, a cyst of the contralateral kidney and urinary retention [10]. On the other hand, Niggli et al. presented a description of a 77-year-old trans man in whom computed tomography and puncture showed that it was Bartholin's cyst that was the cause of recurrent urinary tract infections and urination difficulties [11].

The cyst develops during blockage of the Bartholin's gland outlet. In this situation, the produced mucus loses its outflow path and begins to accumulate in the ducts, leading to their widening. Moreover, the formed cyst can become superinfected, often bacterial, contributing to the development of an abscess. However, a cyst is not a prerequisite for its formation. This is evidenced by the fact that abscesses are almost three times more common than cysts [1,12].

It is also worth mentioning that changes in the gland may take the form of a tumor. However, such a situation is not common, as cancers of this gland are responsible for less than 1% of gynecological neoplasms, constituting 2-7% of malignant tumors of the vulva [13,14]. Nevertheless, it is worth keeping them in mind, especially when diagnosing perimenopausal women, because the median age at diagnosis of Bartholin's gland cancer is 57 years. This is due

to the fact that Bartholin's glands contract during the menopause. Thus, the formation of seemingly harmless cysts in this group may indicate the development of neoplasm, the manifestation of which will be an irregular, permanently hardened and nodular form [1,12].

Clinical presentation:

In a situation where the formed cyst is small and does not become inflamed, it may be asymptomatic. However, even a small one can be observed by clinicians as a medially protruding thickening in the area where the ducts exit into the atrium. Usually, it is from 2 to 4 cm. As it grows in size, it becomes more and more noticeable for the patient, causing pain while walking, sitting and during sexual intercourse [5,12]. Additionally, there may be swelling of the vulva.

An abscess may also have a similar appearance, presenting as a tender tumor in the lower part of the atrium, surrounded by swelling and erythema. It may happen that its size will increase so much that it will lead to skin rupture and spontaneous drainage of the abscess content [1].

Diagnosis:

Ailments related to the Bartholin gland can mimic many other lesions of the labia and vagina. Therefore, during the diagnosis, it is advisable to exclude other types of cysts, hernias, hematomas, lipomas, endometriosis, syringoma, folliculitis, purulent inflammations of the urethral diverticula, gonorrhea, syphilis or vaginitis. Interesting is the case report of Koc et al. in which, in a 47-year-old female patient, perineal leiomyoma imitated the Bartholin mass complex [1,15-17].

Physical examination often reveals asymmetry between the pages of the lower vulva. Soreness is also characteristic, which is much more felt with abscesses compared to cysts. When interviewing patients, it is worth asking about the duration of symptoms, tenderness during various activities (such as sitting, walking, standing or sexual intercourse), vaginal bleeding, and sexually transmitted infections. Important is also the age of the patient, which, as mentioned earlier, may interfere with the cancer [5].

In most cases, a cyst can be diagnosed on the basis of a physical examination alone and does not require further examination. In the case of an abscess, it is advisable to culture the wound swab during its incision and drainage. Such action will make it possible to make an antibiogram, which will favorably translate into the use of an appropriate antibacterial treatment [18].

However, empirical antibiotic therapy is started before the culture results are obtained [12]. Additionally, if the image of the examined lesion is atypical or if the patient is over 40 years old, a biopsy should be considered [5,16].

In some situations, imaging tests may prove beneficial for the verification of changes, including magnetic resonance imaging, computed tomography and high-resolution ultrasound [11,19-22].

Treatment:

Bartholin's gland cysts don't always require treatment. When their course is asymptomatic, they can be left untreated without harmful consequences. Self-draining abscesses and cysts can be treated conservatively with painkillers and sitz baths. In symptomatic cases, an incision and drainage are a simple and quick method of bringing relief to the patient. Admittedly, older work discouraged this approach due to the assumed higher relapse rate. However, recent studies indicate that incision and drainage with Word catheter insertion have a similar recurrence rate as, for example, marsupialization [1,5,23,24].

Word's catheter is a common treatment [25]. Its advantages include the ease of insertion, adjustment and removal of the catheter. In addition, this procedure does not require stitches, has a minimal risk of blood loss and can be performed in pregnant women. The limitations, however, include pain during and after catheter insertion or infections [6]. The catheter consists of an inflatable balloon tip filled with saline solution. The first step is to clean the infected area with povidone iodine. If necessary, local anesthesia with 1% lidocaine can be used. A small 3 mm incision is then made in the area of the primary outlet of the duct. This action avoids visible scarring and at the same time reduces the risk of catheter dislocation. After evacuating the contents of the cyst or abscess, a Word catheter is inserted into the resulting cavity. The outer part of the catheter is pushed into the vagina to limit its movement. The catheter is left in this position for 4-6 weeks [5,6]. In the event of relapse, treatment can be restarted with the addition of antibiotics. Antibiotics should also be considered in people with systemic symptoms (e.g. fever), in patients suspected of sepsis, and in those at high risk of recurrence. Preference is given to those acting on staphylococci (including methicillin-resistant Staphylococcus aureus), streptococci and gram-negative intestinal aerobic bacteria, including Escherichia coli [5]. It is worth remembering that incision and drainage treatment with a Word catheter is not recommended in the case of deep cysts and abscesses [1]. Additionally, before starting the procedure, an allergic history should be

obtained, because the catheter body consists of latex. In the case of allergy to this compound, marsupialization becomes the method of choice [5,26].

Marsupialization is an alternative method of treating Bartholin's gland cysts, the advantages of which include simplicity and speed under local anesthesia or in the case of vulvar nerve blockade. It is characterized by less discomfort for the patient and a lower risk of blood loss than excision [6,27]. It is made through an approx. 2 cm incision, transverse to the hymen ring. Then the cyst walls are unrolled and sewn to the epithelial surface with interrupted absorbable sutures [1,5].

Due to the fact that the gland capsule is exposed to the outside, there is constant external drainage and the healing process is prolonged. Complications also include the risk of secondary infections and the formation of hematomas. As a result of significant scarring, there may be later dysparenuria, while the recurrence rate is 2-25% [6,28].

Another method is to use a CO2 laser, which can be used for vaporization, as well as, for removing the Bartholin gland. Its advantage is the speed of execution, which was confirmed in the study by Panici et al. where the average duration of the procedure was 7 minutes. However, it is not a flawless method as evidenced by its high cost [29,30]. In the case of a CO2 laser, its recurrence rate is also important, which was described in the study by Speck et al., where among the group of 22 women, only 2 relapsed [31]. Similar results were obtained in another study where only 5 out of 31 patients experienced recurrence after the first laser session [32]. Also, important are the data from Freg et al., who compared the use of laser and traditional surgical methods. They showed that the minimal percentage of intra- and postoperative complications and the possibility of performing the procedure in an outpatient setting make CO2 laser surgery more profitable than traditional surgery. However, the technical complexity requiring extensive training and the increased cost of the instrument still prevent its full dissemination in the treatment of Bartholin's gland pathology [33].

Other methods used in the treatment of Bartholin's cysts / abscesses include: silver nitrate ablation, placement of the Jacobi ring, electrosurgery fulguration and conventional excision of the gland. However, these methods are much less widespread. Excision of the gland should be considered when treating patients 40 years of age or older. On the other hand, in pregnant women with Bartholin's abscesses, treatment should be the same as in the rest of patients, except for a gland excision due to an increased risk of bleeding [1,5,34-38].

Summary:

Both abscesses and cysts are common gynecological conditions that are not always treated in the right way. When their symptoms appear for the first time, patients may be anxious, which is related to the insufficient knowledge of the society about them. It is important that during the visit, apart from collecting a detailed interview and conducting the examination, the patient should be thoroughly informed about the cause of their ailments. When choosing a treatment, there are many options that can be used. Nevertheless, each patient should be approached individually, and the selected treatment should be based on ensuring the greatest comfort with good treatment results. It is not possible to indicate a single best procedure for all patients.

The patient should be informed that with each method chosen, there is a chance of recurrence of symptoms. Therefore, it is important to test new therapeutic approaches that could surpass current methods and further improve treatment outcomes and patient satisfaction.

References:

1. Lee MY, Dalpiaz A, Schwamb R, Miao Y, Waltzer W, Khan A. Clinical Pathology of Bartholin's Glands: A Review of the Literature. Curr Urol. 2015;8(1):22-25. doi:10.1159/000365683
2. Quaresma C, Sparzak PB. Anatomy, Abdomen and Pelvis, Bartholin Gland. In: StatPearls. Treasure Island (FL): StatPearls Publishing; January 24, 2022.
3. Yuk JS, Kim YJ, Hur JY, Shin JH. Incidence of Bartholin duct cysts and abscesses in the Republic of Korea. Int J Gynaecol Obstet. 2013;122(1):62-64. doi:10.1016/j.ijgo.2013.02.014
4. Dole DM, Nypaver C. Management of Bartholin Duct Cysts and Gland Abscesses. J Midwifery Womens Health. 2019;64(3):337-343. doi:10.1111/jmwh.12937
5. Lee WA, Wittler M. Bartholin Gland Cyst. In: StatPearls. Treasure Island (FL): StatPearls Publishing; February 2, 2022.
6. Pundir J, Auld BJ. A review of the management of diseases of the Bartholin's gland. J Obstet Gynaecol. 2008;28(2):161-165. doi:10.1080/01443610801912865
7. Marzano DA, Haefner HK. The bartholin gland cyst: past, present, and future. J Low Genit Tract Dis. 2004;8(3):195-204. doi:10.1097/00128360-200407000-00006

8. Hill DS, Butterfield A. Bartholin’s gland squamous cell carcinoma, a rare vulvar neoplasm. Journal of Diagnostic Medical Sonography. 2010;26:296–8. doi:10.1177/8756479310386487
9. Cardaillac C, Dochez V, Gueudry P, et al. Surgical management of Bartholin cysts and abscesses in French university hospitals. J Gynecol Obstet Hum Reprod. 2019;48(8):631-635. doi:10.1016/j.jogoh.2019.03.022
10. Cevik M, Savas M, Guldur ME, Boleken ME. Urinary retention as the presentation of Bartholin's duct cyst in a neonate [published correction appears in J Pediatr Adolesc Gynecol. 2012 Aug;25(4):282. Savas, Murat [removed]; Guldur, Muharrem [corrected to Guldur, Muhammed Emin]; Boleken, Mehmet emin [corrected to Boleken, Mehmet Emin]]. J Pediatr Adolesc Gynecol. 2012;25(3):e65-e67. doi:10.1016/j.jpag.2011.12.071
11. Niggli S, Bausch K, Mijuskovic B, et al. Bartholin gland cyst in a transgender male: case report of a rare occurrence. Transl Androl Urol. 2020;9(4):1773-1777. doi:10.21037/tau-20-733
12. Omole F, Simmons BJ, Hacker Y. Management of Bartholin's duct cyst and gland abscess. Am Fam Physician. 2003;68(1):135-140.
13. Felix JC, Cote RJ, Kramer EE, Saigo P, Goldman GH. Carcinomas of Bartholin's gland. Histogenesis and the etiological role of human papillomavirus. Am J Pathol. 1993;142(3):925-933.
14. Balepa L, Baeyens L, Nemec E, Verhas M. Premier cas de recherche du ganglion sentinelle dans un adénocarcinome de la glande de Bartholin [First detection of sentinel node in adenocarcinoma of Bartholin's gland]. J Gynecol Obstet Biol Reprod (Paris). 2004;33(7):649-651. doi:10.1016/s0368-2315(04)96606-9
15. Koc O, Sengul N, Gurel S. Perineal leiomyoma mimicking complex Bartholin mass. Int Urogynecol J. 2010;21(4):495-497. doi:10.1007/s00192-009-0998-3
16. Altstiel T, Coster R. Bartholin cyst presenting as inguinal hernia. S D J Med. 1993;46(1):7-8.
17. Elkins JM, Hamid OS, Simon LV, Sheele JM. Association of Bartholin cysts and abscesses and sexually transmitted infections. Am J Emerg Med. 2021;44:323-327. doi:10.1016/j.ajem.2020.04.027

18. Kessous R, Aricha-Tamir B, Sheizaf B, Shteiner N, Moran-Gilad J, Weintraub AY. Clinical and microbiological characteristics of Bartholin gland abscesses [published correction appears in Obstet Gynecol. 2013 Dec;122(6):1308. Shteiner, Naama [corrected to Steiner, Naama]]. Obstet Gynecol. 2013;122(4):794-799. doi:10.1097/AOG.0b013e3182a5f0de
19. Berger MB, Betschart C, Khandwala N, DeLancey JO, Haefner HK. Incidental bartholin gland cysts identified on pelvic magnetic resonance imaging. Obstet Gynecol. 2012;120(4):798-802. doi:10.1097/AOG.0b013e3182699259
20. Kozawa E, Irisawa M, Heshiki A, Kimura F, Shimizu Y. MR findings of a giant Bartholin's duct cyst. Magn Reson Med Sci. 2008;7(2):101-103. doi:10.2463/mrms.7.101
21. Eppel W, Frigo P, Worda C, Bettelheim D. Ultrasound imaging of Bartholin's cysts. Gynecol Obstet Invest. 2000;49(3):179-182. doi:10.1159/000010242
22. Silman C, Matsumoto S, Takaji R, et al. Asymptomatic Bartholin Cyst: Evaluation With Multidetector Row Computed Tomography. J Comput Assist Tomogr. 2018;42(1):162-166. doi:10.1097/RCT.0000000000000645
23. Kroese JA, van der Velde M, Morssink LP, et al. Word catheter and marsupialisation in women with a cyst or abscess of the Bartholin gland (WoMan-trial): a randomised clinical trial. BJOG. 2017;124(2):243-249. doi:10.1111/1471-0528.14281
24. Illingworth B, Stocking K, Showell M, Kirk E, Duffy J. Evaluation of treatments for Bartholin's cyst or abscess: a systematic review. BJOG. 2020;127(6):671-678. doi:10.1111/1471-0528.16079
25. Reif P, Ulrich D, Bjelic-Radisic V, Häusler M, Schnedl-Lamprecht E, Tamussino K. Management of Bartholin's cyst and abscess using the Word catheter: implementation, recurrence rates and costs. Eur J Obstet Gynecol Reprod Biol. 2015;190:81-84. doi:10.1016/j.ejogrb.2015.04.008
26. Long N, Morris L, Foster K. Bartholin Gland Abscess Diagnosis and Office Management. Prim Care. 2021;48(4):569-582. doi:10.1016/j.pop.2021.07.013
27. Hu S, Yuan Q, Zhou J, Liao X, Luo D. Comparison of the effect of different ostomies on patients with Bartholin's cyst. Am J Transl Res. 2021;13(6):6905-6912. Published 2021 Jun 15.

28. Aydogan Mathyk B, Aslan Cetin B, Cetin H. Sexual function after Bartholin gland abscess treatment: A randomized trial of the marsupialization and excision methods. Eur J Obstet Gynecol Reprod Biol. 2018;230:188-191. doi:10.1016/j.ejogrb.2018.10.015
29. Di Donato V, Bellati F, Casorelli A, et al. CO2 laser treatment for Bartholin gland abscess: ultrasound evaluation of risk recurrence. J Minim Invasive Gynecol. 2013;20(3):346-352. doi:10.1016/j.jmig.2012.12.003
30. Benedetti Panici P, Manci N, Bellati F, et al. CO2 laser therapy of the Bartholin's gland cyst: surgical data and functional short- and long-term results. J Minim Invasive Gynecol. 2007;14(3):348-351. doi:10.1016/j.jmig.2006.10.015
31. de Góis Speck NM, Belfort PN, Mendes P, Kang HJ, Ribalta JC. Carbon dioxide laser treatment of Bartholin's gland cyst. Clin Exp Obstet Gynecol. 2007;34(1):50-51.
32. Speck NM, Boechat KP, Santos GM, Ribalta JC. Treatment of Bartholin gland cyst with CO2laser. Einstein (Sao Paulo). 2016;14(1):25-29. doi:10.1590/S1679-45082016AO3568
33. Frega A, Schimberni M, Ralli E, et al. Complication and recurrence rate in laser CO2 versus traditional surgery in the treatment of Bartholin's gland cyst. Arch Gynecol Obstet. 2016;294(2):303-309. doi:10.1007/s00404-016-4045-6
34. Wechter ME, Wu JM, Marzano D, Haefner H. Management of Bartholin duct cysts and abscesses: a systematic review. Obstet Gynecol Surv. 2009;64(6):395-404. doi:10.1097/OGX.0b013e31819f9c76
35. Ozdegirmenci O, Kayikcioglu F, Haberal A. Prospective Randomized Study of Marsupialization versus Silver Nitrate Application in the Management of Bartholin Gland Cysts and Abscesses. J Minim Invasive Gynecol. 2009;16(2):149-152. doi:10.1016/j.jmig.2008.10.006
36. Kushnir VA, Mosquera C. Novel technique for management of Bartholin gland cysts and abscesses. J Emerg Med. 2009;36(4):388-390. doi:10.1016/j.jemermed.2008.05.019
37. Omole F, Kelsey RC, Phillips K, Cunningham K. Bartholin Duct Cyst and Gland Abscess: Office Management. Am Fam Physician. 2019;99(12):760-766.
38. Kamilos MF, Borrelli CL, Sciuto R, et al. Is electrosurgery fulguration a better procedure for Bartholin's gland cyst?. Rev Assoc Med Bras (1992). 2020;66(2):201-209. doi:10.1590/1806-9282.66.2.201