Treatment of a Bartholin gland abscess: A step-by-step approach using simulation

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This article provides novice nurse practitioners (NPs) or NP students, as well as NP students' instructors and preceptors, with detailed information needed to safely perform an incision and drainage of a Bartholin gland abscess or large symptomatic Bartholin gland cyst with placement of a Word catheter or wound packing. The authors provide a simulation module that can be used to practice this procedure, which is performed to relieve vulvar discomfort and promote wound healing.

KEY WORDS: **simulation, Bartholin gland abscess, Bartholin gland cyst, incision and drainage, I&D, Word catheter, office gynecology procedures**

In order to increase patient safety while relieving discomfort, nurse practitioners (NPs) must be able to accurately perform vulvar procedures, including the incision and drainage (I&D) of a Bartholin gland abscess or large symptomatic Bartholin gland cyst with Word catheter placement or wound packing. The National League for Nursing cites simulation, and specifically the Jeffries Simulation Framework, as an effective way to teach procedure skills.[1] This framework highlights the benefits of simulation in enhancing learners' skill performance, critical thinking, self-confidence, and overall satisfaction with the learning process.

No publications in the nursing literature specifically address the use of simulation to practice and refine performance of office gynecology procedures for treatment of a Bartholin gland abscess or symptomatic cyst. This article provides a simulation module that can be used to learn, practice, and refine these outpatient gynecologic procedures in a safe environment. The goal of this simulation module is to prepare NPs to safely and accurately perform these procedures in the clinical setting. Novice NPs who have never performed an I&D procedure on a Bartholin gland cyst, NP students, NP instructors, and NP

preceptors may find this simulation module helpful. The article also lists the materials used in this simulation module, which are easy to obtain outside the clinical learning environment and are affordable as well.

Case study presentation

A G0 22-year-old female enters the college health clinic with a new complaint: *I have a painful growth on the lower part of my vagina on the left side that looks like an egg. It hurts both on the inside and the outside of my vagina.* The patient reports that the growth, which appeared 4 days previously, causes discomfort during walking and during sex. The patient states that the primary reason for her visit to the clinic is to gain relief of the discomfort.

Indication for procedure

The Bartholin glands are pea-sized, nonpalpable, and located bilaterally at the 4 and 8 o'clock positions at the base of the labia minora in the vulvovaginal area. Each gland has a narrow duct that is about 2 cm in length, with an opening between the labia minora and the hymenal ring.[2] The duct opening is usually not visible. The Bartholin glands secrete mucus to provide vulvar lubrication during sexual arousal.[2] When the duct of a gland becomes obstructed, a cyst or abscess, usually 1-8 cm in size, may form.[2] Most cysts are asymptomatic and may not require intervention.

However, if an abscess or cyst is symptomatic, then I&D treatment is considered.[3] In addition, patients may ask for treatment of asymptomatic cysts for aesthetic purposes. Bartholin gland abscesses or cysts are predominantly benign when observed in women younger than 40 years. However, if the first presentation of a Bartholin gland abscess or cyst occurs in a woman aged 40 years or older, then a punch biopsy should be performed to rule out a Bartholin gland carcinoma; abscesses and cysts are not often observed in this population.[3,4]

Photograph 1

The goal of this simulation module is to prepare NPs to safely and accurately perform these procedures in the clinical setting.

In many cases, performing *only* a simple I&D procedure of the Bartholin gland abscess or cyst is not therapeutic and can lead to a recurrence. Instead, I&D with placement of a Word catheter to allow drainage and prevent re-accumulation of fluid is highly recommended as first-line treatment *(Photograph 1)*. If a Word catheter is not available, an 8-French pediatric Foley catheter can be substituted.[5] Wound packing is another option if either of the two catheters is not available.[2] Routine culture of the Bartholin gland abscess drainage is not recommended because the results are rarely useful.[6] Treatment with oral antibiotics is not routinely prescribed and is considered controversial; cultures often contain multiple pathogens that are considered normal vaginal flora.[7] Early studies published on Bartholin gland abscesses highlighted *Neisseria gonorrhea* as a common causative pathogen; however, recent reports have not confirmed this finding.[2]

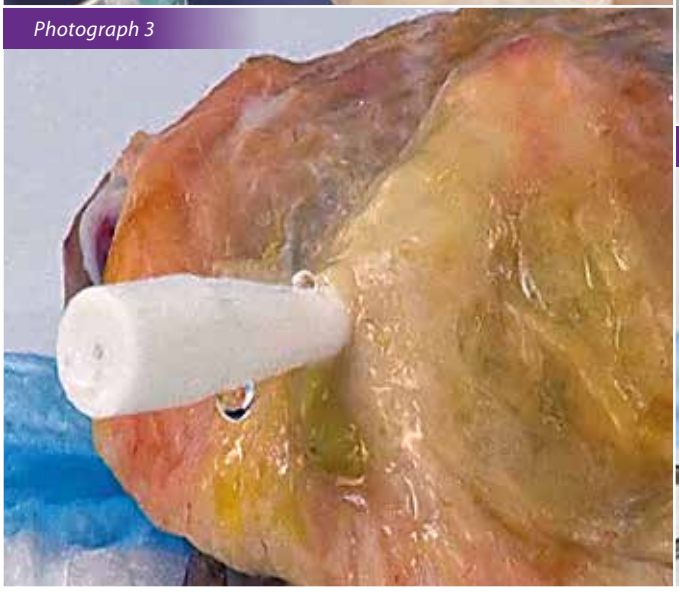
Diagnosis

Diagnosis of the patient's vulvar mass in this case study is a Bartholin gland abscess located at the left side of the vulva at the 4 o'clock position. In this case, the *International Classification of Diseases*-10 code, used to describe the clinical diagnosis, is N75.0. The *Current Procedural Terminology* code, used to describe the procedure performed, is 56420 for I&D of a vulvar or perineal abscess with Word catheter placement and 56740 for incision of a Bartholin gland cyst.

Procedure directions

Prior to performing this procedure, the NP reviews the risks and benefits with the patient and obtains her signature on the consent form. Any known allergies are confirmed. The NP then helps the patient recline in


Photograph 2


Photograph 3


Photograph 4


Photograph 5

the dorsal lithotomy position on the examination table, with both feet placed in the stirrups. The patient's comfort is confirmed.

The NP applies eye protection or a face shield, washes the hands, and applies sterile gloves. The NP cleans the Bartholin gland abscess with povidone iodine or another antiseptic solution and injects 2 mL of lidocaine subcutaneously around the location of the incision site at the posterior base of the abscess. During the 2-3 minutes it takes for the lidocaine to anesthetize the area, the NP confirms that the Word catheter bulb successfully inflates and deflates by filling it with 3 mL of sterile saline using a 5-mL syringe and 22-gauge, 1-inch needle attached to it *(Photograph 2)*. The NP confirms that the area of the abscess is adequately anesthetized by touching it with a cotton swab.

The NP makes a small stab incision with a scalpel (No. 9 or 11 blade) into the abscess that is approximately 1.5 cm deep and 0.5 cm wide. It is necessary to stand clear of the incision site because a reduction in the wound pressure can cause drainage to be forcefully released. While the abscess is draining, the NP quickly inserts a Word catheter into the duct cavity. It is important to insert the Word catheter into the abscess prior to it collapsing; otherwise, insertion may not be achievable. It may be helpful to hold the abscess wall open with a pair of sterile curved hemostats after making the incision to prevent collapse of the cavity once the contents begin to drain.[3] The NP then inflates the catheter balloon tip with 2-3 mL of sterile saline until it is securely fitted inside the Bartholin gland *(Photograph 3)*. The NP confirms that the catheter is securely in place, removes the needle and syringe from the catheter, and gently tucks the catheter base into the vagina *(Photograph 4)*. A perineal pad is placed inside the patient's undergarments because the abscess will continue to drain fluid.

If a Word catheter is not available, then sterile iodoform packing strip can be used to pack the wound. Before the wound is packed, sterile curved hemostats can be used to break up any loculations (multiple pockets) inside the abscess *(Photograph 5)*. Using sterile saline and a syringe, the NP irrigates the abscess and fills the abscess cavity with

sterile iodoform packing in all four quadrants, ensuring that the cavity cannot collapse *(Photograph 6)*. The wound is covered with sterile gauze and taped in place. Of note, I&D with wound packing, as compared with use of a Word catheter, is associated with a higher rate of Bartholin gland abscess recurrence.[6]

After the procedure has been performed, the NP asks the patient to stand up slowly and walk around the room. The NP re-evaluates the Word catheter or wound packing placement if the patient reports severe discomfort at the procedure site upon ambulating.

Post-procedure patient education

Before discharging the patient, the NP provides post-procedure education by teaching her how to care for the wound until the follow-up appointment. The NP instructs the patient that over-the-counter non-steroidal anti-inflammatory drugs (NSAIDs) and sitz baths can be used to manage any post-procedure pain. The NP informs her that oral antibiotic treatment is not routinely prescribed unless cellulitis is present.[2,4] The NP also advises the patient that a small amount of vaginal drainage, and possibly bleeding, may occur from the incision site following the procedure. Therefore, the patient should wear a small perineal pad daily. The patient should be taught to maintain pelvic rest, abstaining from putting anything into the vagina or having intercourse, for a minimum of 4-6 weeks following the procedure. Patients should notify the NP about any of these observations: expulsion of the Word catheter, pain not resolved with NSAIDs, increased vulvar swelling, malodorous vaginal discharge, heavy bleeding from the incision site, or fever.[4]

Photograph 6

Photograph 7

Twice-weekly follow-up visits should occur during the first week post-procedure to evaluate the patient's comfort level and to confirm placement of the Word catheter. Weekly follow-up visits should take place until the Word catheter falls out and the wound heals completely. The goal is for the Word catheter to remain in place for approximately 4 weeks.[4] Based on assessment of the wound, fluid from the Word catheter bulb may need to be removed at each visit. If iodoform packing strip is used instead of a Word catheter, then the wound should be irrigated and repacked at each follow-up visit.

Recurrent abscesses require marsupialization, a surgical procedure performed in the operating room. This procedure consists of wide excision of the Bartholin gland cavity. New techniques being investigated for treatment of Bartholin gland abscess include silver nitrate gland ablation, alcohol sclerotherapy, and carbon dioxide laser therapy.[6]

Description of the simulation

Supplies for this simulation *(Table)* may be purchased from a medical supplier, a grocery store, or an online store. Many supplies are disposable, but some are reusable. Simulation is a cost-effective way to practice this procedure. This simulation can be performed at a minimal cost of about $15.

Photograph 8

Table. Supply list and cost

Supplies	Cost
Raw chicken wing (disposable)	$.98 each
Simulated pus pocket (disposable) (see *Box* for assembly instruction)	$.06 each
5-mL syringe with a 22-, 25-, or 30-gauge 1-inch needle attached containing 2 mL of water or saline used to inflate the Word catheter balloon (disposable)	$.24 each
5-mL syringe with a 22-, 25-, or 30-gauge 1-inch needle attached containing 2 mL of water used to simulate lidocaine (disposable)	$.24 each
Individually wrapped povidone iodine swab stick (disposable)	$.29 each
Underpad (disposable)	$.41 each
Word catheter (reusable) or sterile iodoform wound packing strip*	$11.67 each or $5 per bottle
No. 9 or 11 blade scalpel (disposable)	$1.28 each
Sterile gauze pads 4x4 (disposable)	$.04 each
Curved hemostats (disposable)*	$8.64 each
Non-latex clean gloves (disposable)	$.04 per pair

*Supplies used to pack the abscess only if a Word catheter is not available.

Simulated pus pocket assembly directions

Ingredients and equipment needed for the simulated pus pocket assembly are listed in the *Box*. The NP mixes the oatmeal and water in a microwave-safe bowl, warms the mixture in the microwave for 2 minutes, lets the mixture sit for 10 minutes, and then adds food coloring to the mixture. Next, the NP fills the 60-mL syringe with the oatmeal mixture and injects 10 mL of it into one fingertip of the exam glove. The NP twists the finger of the glove until the oatmeal is at the tip of the finger, forming a ball. The NP ties off the glove finger and trims it *(Photograph 7)*. This recipe makes a batch of 50 simulated pus pockets that are approximately 2 cm each in diameter. Any unused simulated pus pockets can be frozen. Of note, the simulated pus pockets will swell slightly upon freezing.

Box. Assembly of simulated pus pockets

Ingredients
- 1 cup oatmeal
- 2 cups water
- 1 drop green food coloring
- 2 drops yellow food coloring

Equipment
- 60-mL catheter syringe
- Large microwave-safe bowl
- One pair scissors
- 8 non-latex exam gloves

Step-by-step simulation assembly and video link

Once the supplies have been collected, the NP obtains one chicken wing *(Photograph 8)* and slides a simulated abscess pocket under the skin of the wing, forming a bulge. Assembly of the simulated model is now complete. Readers can click on this link to watch the simulation for I&D of a Bartholin gland abscess with Word catheter placement and with iodoform packing.

VIEW: Simulation for I&D of a Bartholin gland[A]

Conclusion

Nurse practitioners providing care to women should have the knowledge and the skills to safely and accurately perform office gynecology procedures such as the I&D of a Bartholin gland abscess with Word catheter placement or iodoform packing. The fast-paced clinical setting does not provide novice NP practitioners or NP students with an environment conducive to mastering newly learned skills. A simulation learning environment can provide educational and clinical benefits to enhance practicing and

refining this important procedure.[8] In a controlled, simulated environment, learners can focus on achieving accuracy, confidence, and competence when performing vaginal procedures.[9]

Aimee Chism Holland is Assistant Professor and Bonnie Bibb is an instructor, both at the University of Alabama at Birmingham School of Nursing. The authors state that they do not have any financial interest in or other relationship with any commercial product named in this article.

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Web resource

A. kaltura.com/tiny/j38nr