

Management of Bartholin's cyst and abscess

Articles in the Tips and Techniques section are personal views from experts in their field on how to carry out procedures in obstetrics and gynaecology.

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Introduction

A Bartholin's duct cyst or abscess is a common condition affecting approximately 2% of women. Trainees working in the acute gynaecology setting see this on a regular basis and they should be familiar with the different treatments available.¹

Anatomy and pathophysiology

The Bartholin's or vestibular glands were first described by the 17th century Danish anatomist Casper Bartholin. These glands are pea sized (0.5–1.0 cm) and are lined with columnar epithelium. The duct length is 1.5–2 cm and is lined with squamous epithelium. The glands are located bilaterally at 4 and 8 o'clock positions at the base of the labia minora. The embryological origin is derived from the urogenital sinus; hence, the blood supply and nerve innervation is via the external pudendal artery and pudendal nerve, respectively. The superficial inguinal and pelvic nodes provide the lymphatic drainage.²

The gland secretes mucus and provides vulval and vaginal lubrication. Blockage of the duct can be caused by trauma, infection and oedema. This leads to a build-up of mucus, which causes dilatation of the duct, leading to cyst or abscess development.

Risk factors³ associated with the development of a Bartholin's cyst and abscess include nulliparity, sexually active women under the age of 40 and previous history of vulval surgery or trauma, such as female genital mutilation. Abscesses are commonly caused by polymicrobial organisms, such as *Escherichia coli* and *Staphylococcus aureus*, although sexually transmitted organisms such as *Gonorrhoeae* may be involved in some cases.²

Bartholin's duct cysts or abscesses^{2,3} are vestibular in location and present with an increase in size and swelling

Box 1. Differential diagnoses of cystic vulvular lesions^{2,3}

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 majora and are mobile and non-tender. It is caused by the obstruction of pilosebaceous cyst.

Hydradenoma papilliform – small nodules arising from apocrine sweat glands and are 0.2–3.0 cm in diameter.

Mucous cyst of the vestibule – small, superficial cysts <2 cm found on the labia minora and vestibule.

Skene duct cyst – found proximal to urethral meatus in vestibule and can present in neonates.

medially. The presentation is that of localised unilateral swelling leading to pain and discomfort. There can also be associated fever with an abscess. Differentiation from other vulvar cystic lesions is important because management can vary (see Box 1).

Management

Management is determined by the symptoms, size, recurrence history and age of the patient and their preference. Bartholin's abscess can be managed conservatively or surgically. Surgical management can be done in the outpatient setting if appropriate equipment and expertise are available. By offering outpatient management, the patient can avoid undergoing general anaesthesia and may be spared a prolonged stay while awaiting a slot on the theatre emergency list. However, in recurrent cases (or if the patient is systemically unwell), surgical management under anaesthesia would be recommended.

The two commonest forms of management in UK practice are under local anaesthesia (in the ambulatory setting) via the use of the balloon catheter, which achieves fistualisation by draining the abscess or cyst, or marsupialisation done under general anaesthesia or sedation.⁴ Both procedures have similar recurrence rates, as shown in the WoMan trial,⁵ a randomised trial carried out in the Netherlands. This study randomly allocated 160 women to treatment by 'Word' balloon catheter or marsupialisation. Recurrence occurred in 12% women with the Word balloon catheter, compared with 10% in the marsupialisation group. After the Word catheter procedure, women recorded pain scores of 33% compared with 74% who underwent marsupialisation.

An Austrian study of 30 women showed that balloon catheter treatment was successful in 87% of cases, with a recurrence rate of 3.8%. The cost of balloon catheter treatment per patient was €216 compared with €1584 for surgical marsupialisation (the higher cost being potentially associated with the need for an overnight stay).⁶ A 2019 systematic review evaluating different treatments for Bartholin's cyst or abscess concluded that current randomised trial evidence did not support a particular treatment, but it did recommend use of balloon catheter over marsupialisation because it has a low recurrence rate and can be inserted easily under local anaesthesia.⁷

Management in the outpatient setting

Outpatient management is a good option when there are reduced theatre services due to bed pressures in winter. Outpatient management also reduces the risk of contracting hospital acquired infections. The acute gynaecology unit should be equipped to allow this procedure, and trainees should be able to carry it out independently.

Conservative management

Conservative management of symptomatic cysts or abscesses may include sitz baths, compresses, analgesics and antibiotics when appropriate. Antibiotics can be given if the patient is pyrexial with or without cellulitis and if there is a risk of a sexually transmitted infection.² If the cyst or abscess does not improve with such measures, then surgical options should be considered.

Outpatient surgical management

A balloon Word catheter (Figure 1 and 2) or 'Jacobi' ring catheter prevents reclosure of the wound and induces a reaction leading to the formation of an epithelised fistula. They are both inexpensive and result in fewer complications with low recurrence rates.

Balloon Word catheter

This is a 5-cm silicon-based uninflated tube with a maximum 3-ml inflation capacity. It is cheap, has a low recurrence rate



Figure 1. Balloon catheter equipment. Inflated silicone catheter attached to a syringe. A small incision is made along the most fluctuant part of the cyst and an uninflated catheter is placed. A total of 2–3 ml of saline is injected to inflate the balloon. The syringe is removed and the open end of the catheter can be left exposed. Photograph of 'Word' balloon catheter provided by Medical Photography department at Queens Hospital, Barking and Havering NHS Trust.



Figure 2. Silicone catheter and syringe. Photograph provided by Medical Photography department at Queens Hospital, Barking and Havering NHS Trust.

(12% at 12 months) and is well tolerated. Disadvantages are that there is a 23% risk of premature expulsion, insertion can be painful, and it is contraindicated in patients with a latex allergy.^{2,4}

The cyst/abscess and surrounding area should be cleaned with a suitable cleaning solution and the area infiltrated with 5–10 ml of 1% lignocaine. A 5-mm stab incision can be made with a blade on the mucosal surface of the abscess or cyst. The cyst/abscess should be drained and swabbed to determine the organism. A swab stick can be used to clean the cavity and break locules, and the balloon catheter inserted. The balloon can be inflated with 2–3 ml of normal saline with the provided syringe and needle (Figure 3) and end placed in the vagina. A suture can be applied to prevent the balloon from falling out if it appears loose.



Figure 3. Jacobi ring catheter. Ring made from the tubing of a butterfly venipuncture set. Photograph of Jacobi ring provided by Medical Photography department at Queens Hospital, Barking and Havering NHS Trust.

The catheter remains in place for 4–6 weeks until the tract is re-epithelialised; a minimum of 4 weeks is recommended for a good result. A 4-week follow-up appointment should be organised for balloon removal (though in some instances it may fall out before this). If the patient has significant pain at the site, removing 1 ml fluid to deflate the balloon may improve their symptoms.^{2,3} The patient should be provided with leaflets and contact details of the emergency gynaecology unit.

Ring catheter or Jacobi ring

This is an uncommon procedure in the UK, but may be useful in a resource-poor setting. In a randomised study,⁸ Word catheter and the Jacobi ring were compared, and no

differences in recurrence rates were observed. However, reported patient satisfaction was better with the Jacobi ring. In this procedure, an incision is made into the mucosal surface of the abscess, which is then drained. A Kelly's forcep is inserted into the incision into the abscess/cyst cavity, where a second incision is made. The Kelly's forcep is then used to grasp one end of a 7-cm 8 French T-tube or 5 cm tubing from a butterfly venipuncture set with an absorbable suture in the lumen through the cavity. Both ends of the suture are tied forming a ring (Figures 3 and 4). Unlike the balloon catheter, it does not risk premature expulsion and can be left in place for 4–6 weeks. It is removed by cutting the suture and removing the tube.^{3,8}

Use of the Jacobi ring catheter has a low recurrence rate (4% in 12 months), is inexpensive, presents no risk of premature expulsion, and is an easy procedure to perform. However, it requires two incisions and can be painful.⁹

Sclerotherapy

Alcohol or silver nitrate can also be used to chemically destruct the epithelial lining of a Bartholin's duct cyst or abscess; however, this is not common practice in the UK.^{3,8}

In alcohol sclerotherapy, an 18- to 20-gauge needle is inserted into the cyst at the point of maximal fluctuation and the contents are aspirated. Alcohol (70%) is injected into the cyst and left for 5 minutes, then re-aspirated. This procedure heals within a week and causes less tissue damage than silver nitrate sclerotherapy.³ However, recurrence occurs in 8–10% within 6–7 months, and there is a risk of tissue necrosis, haematoma and dyspareunia associated with destruction of the gland surface.^{3,7}

In silver nitrate sclerotherapy,^{3,5} the area is infiltrated with local anaesthetic and the contents drained. A 5-mm-diameter silver nitrate stick is inserted into the cavity with a suture applied at the site to maintain the position of the stick in the

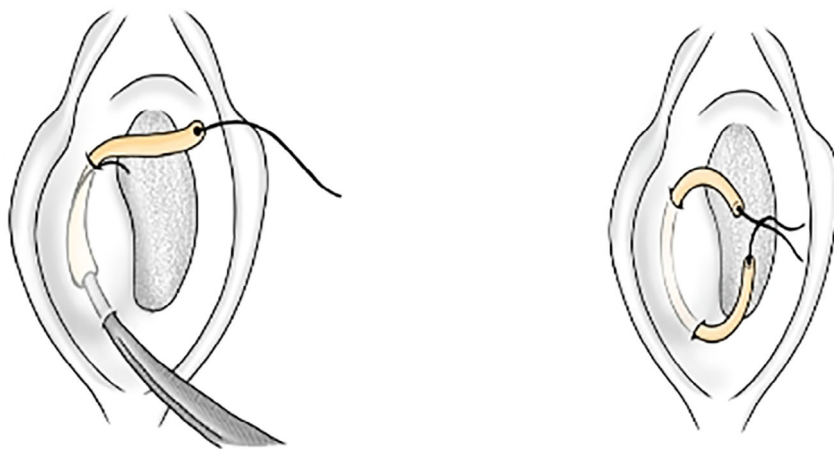


Figure 4. Insertion of Jacobi ring catheter. Two incisions are made on the cyst, the tube is inserted and pulled out with an Allis forceps and the suture then tied. Illustration of Ring catheter insertion provided by Mr S Naqvi.



Figure 5. Illustration of marsupialisation. A superficial incision is made over the most fluctuant part of the cyst and the mucosa separated exposing the cyst wall. An incision is made along the cyst and the contents drained. The cyst wall and mucosa can be sutured with interrupted absorbable sutures around the gland opening. Illustration provided by Miss M Sharma.

cavity. The stick is removed after 3 days and should have necrotised tissue attached.

This procedure is quick to perform, equipment is easy to source, and it has a 2-week healing time.^{1,3} However, scarring, chemical burns, labial oedema and pain can occur, and the recurrence rate is 3.8% at 2 months.^{1,3}

Needle aspiration

Needle aspiration is a simple procedure but has a 13% recurrence rate and is not recommended in current practice.¹³

Inpatient/day-case surgical management

Marsupialisation

This procedure should be done under general anaesthesia because it can be uncomfortable for the patient. The operator requires a sterile environment with appropriate lighting. It is recommended for the treatment of recurrent cysts and abscesses. In a sterile setting, an incision is made along the entire length of the cyst on the mucosal surface. Small incisions are better avoided, as the opening will shrink by

50% while healing, thereby increasing the risk of recurrence. Once the cyst is opened, it can be drained and irrigated with saline.^{3,4} Locules in the cavity can be broken using an Allis forcep or small blunt curettage. If there is bleeding, it can be packed with ribbon gauze. The cyst wall and mucosa can be sutured with interrupted absorbable sutures (2.0 or 3.0 Vicryl) all around the gland opening (Figure 5).

This procedure has low recurrence rates (0% at 6 months and 10% at 12 months) and high patient satisfaction.⁵ However, there is a risk of secondary infection and scarring, and risks associated with general anaesthesia. It is also more expensive and healing is prolonged.

Postprocedure care

Patients are advised to:

- Keep the perineum clean and dry
- Wear and change sanitary towels regularly
- Use simple analgesia, such as paracetamol, or NSAIDs such as ibuprofen, for pain relief
- Avoid intercourse for 5 days if marsupialisation is undertaken (but intercourse is fine if a balloon catheter is in place)
- Wear loose fitting clothing and underwear.

Patients should be provided with information leaflets and contact details of the emergency gynaecology unit.

Cancer risk

The risk of malignancy in the Bartholin's gland is rare and makes up 5% of vulval cancers. The commonest type of carcinoma found is squamous cell carcinoma associated with human papillomavirus type 16, and adenocarcinoma. This is commoner in women over the age of 40 and can present as a firm, fixed or irregularly shaped swelling. In these patients, biopsy with or without excision is recommended.¹⁰ Early recognition of this condition is important because of the risk of local invasion and metastasis.^{1,3}

Recurrent Bartholin's cyst

Excision of the gland can be considered under general anaesthesia in cases that reoccur despite marsupialisation or Word catheter. There is a high chance of blood loss due to the blood supply from the pudendal artery and the overlying venous plexus of the vestibular bulb. Postoperatively, there is a risk of haematoma formation, cellulitis and dyspareunia.^{1,3,12}

Excision of the cyst involves using Allis clamps to retract the labia and an incision is made on the vaginal mucosa above the gland. Retracting the mucosa exposes the gland and a small scissor can be used to separate the cyst wall from the vaginal mucosa. Forceps can be applied to the cyst wall

for retraction, which allows dissection and identification of the blood supply. After removal of the gland, the dead space should be closed with absorbable sutures and a small drain can be placed to prevent haematoma formation.¹²

Conclusion

Bartholin's duct abscess or cyst is a common condition that presents in acute gynaecology and can be managed in the outpatient setting with the use of a balloon Word catheter. This is less painful, has a low recurrence rate, and allows patients early resumption of sexual activity. Marsupialisation in theatre should be reserved for recurrent cases and for women who are unable to tolerate balloon catheter insertion. Women need to be aware of risks and complications of both procedures and have written information provided.¹²

Disclosure of interests

There are no conflicts of interest.

Contribution to authorship

MS instigated and edited the article. ABP researched and wrote the article. Both authors approved the final version.

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