Case Report

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(ISSN Online:2229–3566, ISSN Print:2277–4343)

# A CHALLENGING DIAGNOSIS OF POSTERIOR VAGINAL WALL DERMOID CYST ALONG WITH ANTERIOR FISTULA-IN-ANO: A CASE REPORT

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Received on: 03/8/24 Accepted on: 29/8/24

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**DOI: 10.7897/2277-4343.155147**

**ABSTRACT**

A dermoid cyst is a cystic swelling due to the entrapment of ectodermal tissue that occurs in the line of embryonic fusion. In which vaginal dermoid cyst is a sporadic condition, documented less than ten in literature. Fistula-in-ano is a well-known clinical entity with variable aetiology, an extension of the blind tract, and a variation of treatment in the protocol. A 42-year-old female presented with complaints of pain in the perianal region aggravated during defecation, along with dropwise bleeding in the last 2 days. On examination, late second-degree pile mass at 11 'O'clock, induration between 12 to 1 'O' clock with hard swelling in the vaginal wall and internal opening at 12 'O'clock. As there was no abnormality detected in PV except a hard mass at the posterior vaginal wall. Diagnostic findings revealed the collection of abscesses in the perineum and cystic enlargement in the posterior vaginal wall, possibly due to an infected Bartholin cyst. The patient was operated on for fistula-in-ano and a biopsy of the cystic swelling at the vaginal wall. The swelling was surgically removed during the operation, and cheesy white stuff emerged. After the sac was sent for a biopsy, the benign squamous epithelium in the histopathology report confirmed the dermoid cyst diagnosis. The patient got complete relief from pain in the perianal region within six weeks of treatment. Vaginal dermoid cysts though rarest of rare, must be kept for differential diagnosis of vaginal cysts, which is a common occurrence in anterior fistula-in-ano.

**Keywords**: Bartholin cyst, Dermoid cyst, Fistula-in-ano, Rectovaginal fistula

## INTRODUCTION

A dermoid cyst is a cystic swelling due to the entrapment of ectodermal tissue that occurs in the line of embryonic fusion. They may be either congenital or acquired and are usually classified into four types: sequestration dermoid, tubulodermoid, implantation dermoid and teratomatous dermoid. The most common sites are the forehead, neck, postauricular dermoid, external angular dermoid, root of the nose, sublingual dermoid and anywhere in the midline or the line of fusion.[1] In which vaginal dermoid cyst is a scarce condition, documented less than 10 in literature to date.[2] Treatment of dermoid cyst includes surgical excision along with covering epithelium. Incomplete excision or residual tissue left behind during surgery may cause a recurrence of a dermoid cyst. [3]

Fistula-in-ano is considered to be a complicated disease due to its nature of recurrences and exacerbations. Anterior fistula-in-ano always needs special attention as it can extend upward through an intersphincteric plane that will course along the rectal wall or penetrate beyond the rectum. The high upward extension can enter even the true pelvis. Other possibilities are rectovaginal fistula in females and recto-urethral fistula in males. [4] Fistulotomy is a suitable treatment for simple fistula in-ano, whereas complex fistula-in-ano possesses a higher risk of recurrence and incontinence, making management more challenging. Various treatment modalities include cutting seton, advancement flap, fibrin glue injection, and ligation of intersphincteric fistula tract (LIFT). In Ayurveda, fistula-in-ano can be co-relate with Bhagandara as one among Asta Mahagada (eight serious diseases that are difficult to treat by nature itself). [5] Kshara is mentioned as the treatment of choice for Bhagandara by Acharya Vagbhata. [6]

The case presents a rare and unique occurrence of a dermoid cyst in close proximity to an anterior fistula-in-ano. Furthermore, the presence of a dermoid cyst in the posterior vaginal wall is extremely rare, making this case even more exceptional. The close proximity of the cyst to the fistula raised concerns about possible higher extension, highlighting the complexity and distinctiveness of this case.

## CASE REPORT

A 42-year-old female, multigravida, non-diabetic and normotensive, came to Shalya tantra OPD with presenting complaints of pain in the perianal region exacerbated during defecation along with dropwise bleeding in the last two days. There was no history of pus discharge from the perianal region, feeling of mass per anum and protrusion of mass per anum during defecation. She had a history of accidental injury to her right eye at six years of age and lower segment caesarean section (LSCS) twelve years and ten years back. The patient had no history of hypertension, diabetes mellitus and IHD. There was no relevant family history.

**Consent:** Informed written consent was obtained from the patient during enrolment for treatment and publication of the data without disclosing the patient's identity. The study was carried out as per the International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP).

**Diagnostic Criteria**

On local examinations, inspection revealed an external component at 11 'O'clock and reddish black shiny discolouration present at 1 O'clock position in lithotomy on palpation, there was induration present at 1 to 12 O'clock with tenderness, and no external opening was present; on per-rectal (PR) examination internal opening was felt at 12 O' clock just above the dentate line along with hard swelling at rectovaginal septum. During per-vaginal (PV), firm swelling in the posterior vaginal wall and no tenderness and any active pus discharge were present. (Figures 1, 2)

USG of perianal and endoanal region report reveals an 11 mm x7 mm x12 mm sized abscess in the perineum on the left side abutting the left-sided anterolateral anal canal. 18 mm x 18 mm x 13 mm sized cyst with internal high-level echoes seen along the lower part of the posterior wall of the vagina suspecting Bartholin cyst. (Figure 3) Although the report was not satisfying, the patient was posted for surgical management of fistula-in-ano and biopsy of cyst after necessary investigations.

**METHODOLOGY**

**Preoperative:** Prior to surgery, complete information about the procedure, prognosis, and outcome was given to the patient and informed written consent was obtained. Injection of tetanus toxoid 0.5 ml intramuscular (I/M) was given, and Inj. Xylocaine 0.1 ml intradermally (I/D) for sensitivity was done. The patient was kept Nil by mouth (NBM) for 6 hours before surgery. Part preparation was done, and glycerine enema was given before surgery.

**Operative:** The patient was taken to operation theatre (OT) with normal vitals with due precautions. An anaesthetist gave spinal anaesthesia (Sadal block) in a sitting recumbent position followed by a lithotomy position. The painting was done with a povidone-iodine solution of 10 % and followed by spirit. Draping was done with a sterile cut sheet. On thorough examination, a pinpoint external opening was seen at 1 'O'clock position after the bursting of the abscess and the internal opening was felt at 12 'O'clock just above the dentate line. A patency test was done from the external opening at 1 'O'clock, simultaneously placing two sims speculums in the anterior vaginal wall and anal canal, which came out from the internal opening at 12 'O'clock inside the anal canal, thus excluding the possibility of rectovaginal fistula. So, a 0.5 mm linear incision was taken above the cyst in the posterior vaginal wall, and cheesy stuff emerged, followed by complete excision of the sac and sent for histopathology, which later revealed as benign squamous epithelium. (Figure 4) The postoperative wound at the vaginal wall was secured with two simple interrupted sutures taken with Vicryl 3-0 round body. A tight vaginal pack was placed to prevent any haematoma formation. Partial fistulectomy and Ksharasutra ligation (KSL) were done from 1 to 12 'O'clock, and open haemorrhoidectomy was done at 11 'O'clock. Proper haemostasis was achieved, and the patient was shifted to the ward with normal vitals. (Figure 5)

**Postoperative**: Vaginal pack was removed after 48 hours. The patient was advised to take a sitz bath in Panchavalkal Kwatha (Panchavalkal decoction). As oral medication, Kanchanara Guggulu (each 500 mg) is two tablets thrice a day with lukewarm water after meals, Varunadi kwatha 15 ml with 45 ml of lukewarm water twice a day before food and 5 gm of Eranda Brista Haritaki bedtime with warm water. KSL change was done every 8$^{th}$ day for 5 weeks. The patient was advised to maintain hygiene, avoid strenuous activity for 1-2 weeks, and resume sexual activity, use condoms prophylactically till complete healing of the postoperative wound.

**Follow-up and outcome**

The patient got complete relief from pain in the perianal region within six weeks of treatment (Figures 6 to 7). Follow-up was taken up to 3 months. There was no recurrence, and complications were found in a follow-up period of up to 3 months.

**DISCUSSION**

Dermoid cyst is a rare benign cystic teratoma showing well-differentiated derivatives of all three germ cell layers. As a dermoid cyst arises from the outer embryonic layer, it has the capacity to mature into bone, teeth and hair. The most common site of the dermoid cyst is the ovaries, i.e., 80% of the reproductive age group and 50% of the young girls. [7] The differential diagnosis of a vaginal dermoid cyst includes other benign conditions, such as epidermoid inclusion cyst, which typically result from local trauma such as episiotomy and Gartner's cyst, which is an embryological remnant in the lateral vaginal wall.

A vaginal dermoid cyst was first reported by Stokes in a 44-year-old female with a one cm cyst just within the hymen, which contains numerous sebaceous glands and few hair follicles. [8] Curtis reported a case of an ulcerated orange-sized necrotic cyst containing sebaceous material and hair in the vaginal mucosa. [9] Johnston published about a 4-inch cyst that passed from the vagina in a woman following the delivery of her second child. In which the cyst was filled with thick sebaceous material, matted hair and had been attached to the vaginal wall by a narrow stalk. [10] Hirose *et al.* described another case of having a repeated painful right vaginal wall cyst, which was excised and was found to be a dermoid cyst confirmed by histopathological examination. [11]

Transvaginal excision of this type of cyst appears to be an appropriate surgical treatment option, which conforms with some previous studies. Vaginal cyst excision can be complicated by various factors, including fibrosis in chronic cases, which can lead to difficulties in making a precise incision and potentially result in the rupture of the cyst wall, extruding the cheesy material out which makes the operative field messy and making it difficult to secure the bleeders. Secondary infection if healing is inadequate and there is no appropriate antibiotic treatment. A rare complication is malignancy. [12] Here patient sought medical attention for complaints of fistula-in-ano, and the patient had no complaints like dyspareunia, swelling protruding per vagina etc. So, the case of the vaginal dermoid cyst was accidentally diagnosed with fistula-in-ano. Transvaginal surgical excision of cysts remains the treatment of choice as done in the present case. Histopathological reports also confirm the diagnosis.

Fistula-in-ano (Bhagandara) is a communicating track between two epithelial surfaces, commonly between a hollow viscus and the skin (external fistula) or between two hollow viscera (internal fistula). The track is lined with granulation tissue which is subsequently epithelialized. [13] Partial excision of the fistulous tract is generally preferred to preserve the integrity of the anal sphincter muscles, thereby minimizing the risk of faecal incontinence. The remaining tract is managed with Ksharasutra (medicated seton), which destructs the wall of the fibrotic

fistulous tract by Ksharana (corrosive action) property of Kshara, causing inflammation in the tract and necrosis of fibrous tissue. Fibroblastic proliferation forms a fibrin network and helps in healing by promoting the formation of granulation tissues. [14]

As cutting the tract by the Ksharasutra is a slow process, the tissue gets sufficient time for proper healing, thus preventing damage to the sphincters and change in continence. Panchavalkal Kwatha were used for daily dressing, and sitz baths have been proven to have anti-infective action against various micro-organisms through various studies. [15] Panchavalkala are the bark of Vata (*Ficus bengalensis* Linn), Udumbhara (*Ficus glomerata* Roxb), Ashwatha (*Ficus religiosa* Linn), Parisha (*Thespesia populnea* Soland) and Plaksha *(Ficus lacor* Linn.) having Kapha-Vatahara property. [16] Kanchanara Guggulu, which helps balance Vata and Kapha, reduces Meda dhatu and has shothahara (anti-inflammatory) properties. [17] Varunadi Kwatha reduces Kapha and Meda dhatu. [18] It also controls chronic inflammation. [19]

Here, the patient presented with complaints of fistula-in-ano, while the dermoid cyst was incidentally discovered during the examination. As we suspected, fistula-in-ano, a TRUS, was performed, but in the dermoid cyst of the vaginal wall, transvaginal ultrasound (TVS) will give a clearer picture. The patient got complete relief after 6 weeks of treatment and daily dressing.

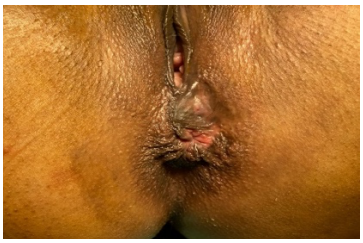


**Figure 1: Preoperative photo. The pinpoint external opening can be seen at 1 'O'clock.**

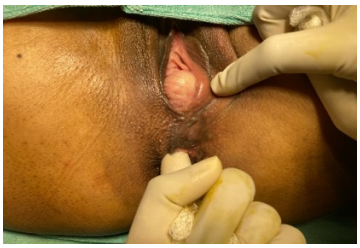
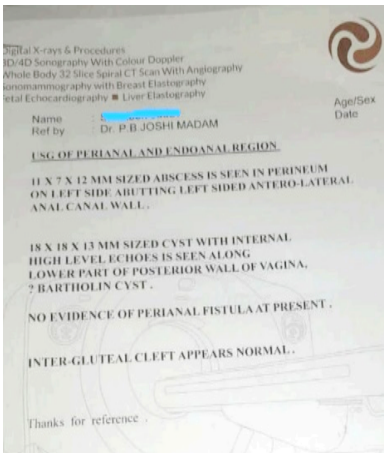


**Figure 2: Dermoid cyst visible through the posterior vaginal wall during per rectal examination.**



DigiTal X-rays & Procedures
3D/4D Sonography With Colour Doppler
Whole Body 32 Slice Spiral CT Scan With Angiography
onomammography with Breast Elastography
etal Echocardiography ♥ Liver Elastography

Name :
Ref by : Dr. P.B.JOSHI MADAM

Age/Sex
Date

USG OF PERIANAL AND ENDOANAL REGION:

11 X 7 X 12 MM SIZED ABSCESS IS SEEN IN PERINEUM ON LEFT SIDE ABUTTING LEFT SIDED ANTERO-LATERAL ANAL CANAL WALL .

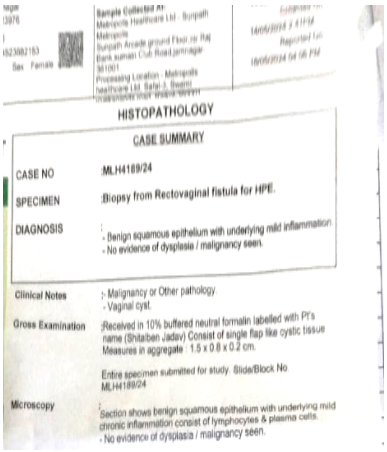
18 X 18 X 13 MM SIZED CYST WITH INTERNAL HIGH LEVEL ECHOES IS SEEN ALONG LOWER PART OF POSTERIOR WALL OF VAGINA. ? BARTHOLIN CYST .

NO EVIDENCE OF PERIANAL FISTULA AT PRESENT .

INTER-GLUTEAL CLEFT APPEARS NORMAL .

Thanks for reference .

**Figure 3: TRUS report abscess collection and suspected Bartholin cyst.**



HISTOPATHOLOGY

CASE SUMMARY

CASE NO :MLH4189/24

SPECIMEN :Biopsy from Rectovaginal fistula for HPE.

DIAGNOSIS :
- Benign squamous epithelium with underlying mild inflammation
- No evidence of dysplasia / malignancy seen.

Clinical Notes :- Malignancy or Other pathology
- Vaginal cyst

Gross Examination :Received in 10% buffered neutral formalin labelled with Pt's name (Shitalben Jadav) Consist of single flap like cystic tissue Measures in aggregate : 1.5 x 0.8 x 0.2 cm.

Entire specimen submitted for study. Slide/Block No. MLH4189/24

Microscopy :Section shows benign squamous epithelium with underlying mild chronic inflammation consist of lymphocytes & plasma cells.
- No evidence of dysplasia / malignancy seen.

**Figure 4: Histopathology report suggestive of benign squamous epithelium.**

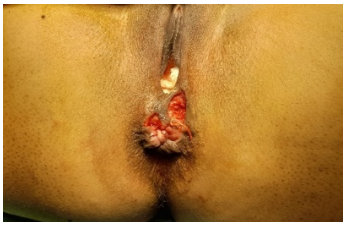


**Figure 5: Postoperative photo. Trans-fixation and ligation of 11 'O' clock pile mass. Partial fistulectomy with KSL at 12 'O'clock, Excision of the cyst at the posterior vaginal wall (vaginal pack placed to prevent haematoma formation)**

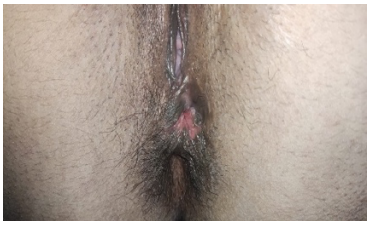


**Figure 6: Healed photo**

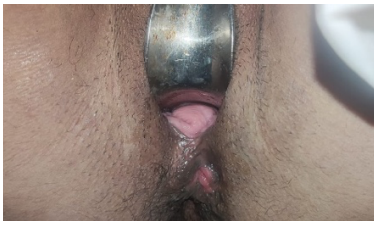


**Figure 7: Healed photo**

## CONCLUSION

Vaginal dermoid cysts though rarest of rare, must be kept for differential diagnosis of vaginal cysts, which is a common occurrence in anterior fistula-in-ano. As preoperative diagnosis may be difficult, confused or even missed in sonography, histopathological examination remains the golden standard for diagnosis of vaginal dermoid cyst. In this case, the dermoid cyst was an accidental diagnosis along with anterior fistula-in-ano as the patient had only complaints related to fistula-in-ano. So, in all surgical interventions, having a secondary plan to address unexpected outcomes and complications is prudent.

## ACKNOWLEDGEMENTS

Director, Institute of Teaching and Research in Ayurveda for providing facilities in the hospital for clinical activities.

### Limitation of Study

This is only one case study which describes a single patient's experience due to the rarity of this condition.

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**Cite this article as:**

Krishna R Chandran, Pashmina B Joshi and TS Dudhamal. A challenging diagnosis of posterior vaginal wall Dermoid cyst along with anterior Fistula-in-ano: A Case Report. Int. J. Res. Ayurveda Pharm. 2024;15(5):21-24
DOI: http://dx.doi.org/10.7897/2277-4343.155147

Source of support: Nil, Conflict of interest: None Declared