Title: Rectovaginal Fistula due to an Erosive Pessary: A rare case reported in an 82-year-old female

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Compliance with ethical standards: Informed consent was obtained for this case report.

Authors Contribution Statement:

Contributor Role	Role Definition	Authors 1	2	3	4	5	6
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.	X	X	X			
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse.	X					
Formal Analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.		X	X		X	
Funding Acquisition	Acquisition of the financial support for the project leading to this publication.						
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.			X	X		X
Methodology	Development or design of methodology; creation of models						
Project Administration	Management and coordination responsibility for the research activity planning and execution.		X				
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.						
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.						
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.					X	X
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.						
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.						
Writing – Original Draft Preparation	Creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).	X			X		

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Writing – Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.	X

Highlights: The reason for conducting this particular case report is that if some treatment method is of paramount benefit for a disease than it can also have its negative outcomes. As case reports are all about rare cases keeping in view that particular point we also have reported a case of ring pessary induced rectovaginal fistula which is a rare case because of high success rate and safety profile of modern day pessaries. That's why we have reported this rare case of RV fistula in 82 years old female using ring pessary.

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1 **ABSTRACT.**
2 **Background:** Pelvic organ prolapse (POP) is a condition when organs in the pelvis fall from their normal position
3 due to a weakening of the pelvic muscles and produce a bulge in the vagina. Pessaries have long been used to
4 treat POP but may result in rectovaginal fistulas as a rare complication.
5 **The Case:** We report a rare case of a rectovaginal fistula following the utilization of ring vaginal pessary in an 82-
6 year-old G7P7007 female with a past medical history of bipolar disorder who presented initially for nursing care and
7 psychiatric support. A trained psychologist evaluated the patient, and no psychological morbidity was identified, but
8 a history of fall two days ago and diffuse abdominal pain was recognized. Chronic urinary incontinence was also
9 reported. Gynecological pelvic examination revealed a rectovaginal fistula, and impacted stools were noticed in the
10 vagina, which were manually removed.
11 **Conclusion:** The use of ring pessaries, though a conservative management option for pelvic organ prolapse, may
12 lead to a rectovaginal fistula, a rare but severe complication.
13
14 **Key Words**: Erosive pessaries, Rectovaginal Fistula.

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INTRODUCTION.

Pelvic organ prolapse (POP) is a common finding in elderly, obese women with a prevalence of 3-6% symptomatically and up to 50% clinically.[1–3] Treatment options for POP range from non-invasive pelvic floor exercises and medical management to more invasive surgical options. Inserting a vaginal pessary is an inexpensive, helpful, easy-to-use treatment option for POP with a high success rate.[4] It is offered as a first-line treatment to women with mild prolapse, elderly and frailer (making them poor surgical candidates), and those who refuse surgery.[5] Severe complications of pessary use are rare but include rectovaginal fistulas [6-14], vesicovaginal fistulas [15] cervical entrapment [16] and intestinal obstruction [17] Reported cases of rectovaginal fistulas in the literature are scant. We report a case of rectovaginal fistula following the use of a vaginal ring pessary in an 82-year-old female.

THE CASE.

An 82-year-old G7P7 female with a past medical history of bipolar disorder presented for nursing care and psychiatric support. A trained psychologist evaluated the patient, and no psychological morbidity was identified, but a history of fall two days ago and diffuse abdominal pain was recognized. Chronic urinary incontinence was also reported. A thorough neurological exam showed the patient was well oriented to time, place, and person with slightly reduced power in upper and lower limbs. The patient was unable to move and complained of back pain and abdominal pain. An orthopedic consultation was placed to rule out a vertebral fracture as a fall history was associated with reduced mobility. Her vitals were stable. The orthopedic examination was consistent with reduced power (grade 4), and an otherwise unremarkable X-ray of the lumbar spine showed a ring pessary lying vertically misplaced in the rectum (Figure 3).

Gynecological pelvic examination revealed a rectovaginal fistula, and impacted stools were noticed in the vagina, which were manually removed (Figure 4). There were no complaints of vaginal or rectal bleeding or other gastrointestinal symptoms. Ultrasonogram abdomen/pelvis was unremarkable. The following day, a colonoscopy revealed a low-lying large rectovaginal fistula involving both the rectum and the anal canal (Figure 1). Two large masses were observed, one at the posterior wall of the vagina and the other attached to the rectal wall at the fistula site. A misplaced ring pessary was removed from the rectum. Impacted stools were removed both from the rectum and the vagina. Biopsies of the masses were taken and sent for histopathology. Biopsy results showed chronic granulation tissue which resulted in gradual erosion of the gut mucosa eventually forming a fistula (Figure 2). Further questioning revealed that the patient had urinary incontinence secondary to POP two years ago and had a ring pessary placed as a non-invasive treatment of her choice. Follow-up was expected, but an enema was never performed due to patient refusal for a detailed examination and enema. Patient was also incompliant towards regular follow-up visits. The pessary improved her incontinence initially, but it became worse gradually. A management plan was devised to mobilize the patient and proceed with an initial dysfunctioning loop colostomy with a definitive plan of fistula repair and colostomy reversal in subsequent surgeries due to the deteriorated condition of the vaginal tissue. The patient underwent the procedure without complications.

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1 The patient stayed in the hospital for nursing care and was routinely examined for improvement. Stools were
2 occasionally removed from the vagina and rectum. The patient suffered from multiple episodes of urinary tract
3 infections (UTIs) during the stay, which were treated promptly following positive culture reports. The patient was in
4 the hospital for three months due to social reasons. A repeat colonoscopy after three months revealed decreased
5 size of chronic granulation tissue but persistent fistula. Repeat pelvic examination showed persistent Grade 2
6 cystocele with atrophic vaginal walls without ulceration. Manual reduction was made. A subsequent positron
7 emission tomography (PET) Scan was placed to rule out suspicious rectal/uterine carcinoma, which was negative.
8 Posterior bladder wall thickening and osteoporosis were appreciated. Due to old age and the patient's choice,
9 closure of fistula and reversal colostomy were called off, and the patient was put on a conservative management
10 plan. She was discharged in a stable condition with the provision of continuous nursing support at home. Stoma
11 care was advised. Clean enemas were provided periodically. The patient stayed under our care for almost four
12 months duration with strict observation. Psychological support and counselling remained consistent throughout
13 patient stay. Patient's consent was obtained in order to publish this case report.
14
15 **DISCUSSION.**
16 POP is a relatively common finding. Around one-quarter of women in the United States reported symptoms of pelvic
17 floor disorders, including POP .[2] Pessaries have been considered an effective treatment method for POP and have
18 been in use for a long time in different forms ranging from fruits to metal to cotton and wool.[18] With advancements
19 in medicine, today, they are mainly composed of silicone, and various types exist.[5] Common complications of
20 pessary use include discharge, bleeding, irritation, and ulceration.[18] Rare complications such as rectovaginal
21 fistulas are now more commonly reported in the literature, particularly in older women after 3-5 years of insertion
22 (Figure 6).[6–14] Our patient developed a fistula within two years of insertion, even with regular follow-up (but rejecting
23 attempts for an enema scan at visits), and experienced no significant symptoms. Detailed gynecological pelvic
24 examination, including an enema, should be performed at each visit to assess the condition and location of the
25 pessary. An X-ray may add to this. Proper patient selection, physician awareness, and continuous care post-
26 insertion are the factors that play an essential role in the use of pessary devices. Different treatment options have
27 been used in the past to manage rectovaginal fistulas, including a vaginal estradiol cream [12], transanal fistula repair
28 [9], transverse transperineal repair [8], and a transvaginal approach.[14] The management of such a case begins with
29 careful pessary removal and a detailed physical examination, specifically a gynecological pelvic examination, which
30 paves the way for a definitive management plan. In this case, we planned an initial dysfunctioning colostomy (a
31 dysfunctioning stoma is created in the initial surgery as a temporary diverting pathway and will be subsequently
32 closed when the anastomosis is fully healed - Figure 5) which was completed uneventfully. Enough time was given
33 for the inflammatory mucosa to heal with a plan to repair the rectovaginal fistula and subsequent colostomy reversal
34 in the future. Three months post-surgery, the granulation tissue was decreased in size, but on further discussion
35 with the patient, it was decided not to proceed with any further surgical treatment keeping in view the patient's will,
36 frailty, and potential complications related to the procedures. The patient was advised on continuous nursing and
37 stoma care. Six months post-procedure, the stoma was in working condition without any complications.
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RECOMMENDATIONS.

We recommend that guidelines on the long-term use of the pessary for pelvic organ prolapse and treatment of rectovaginal fistula as a complication of pessary be standardized. Regular follow-up after pessary insertion and patient education are essential factors to prevent complications. This may include counselling and informing the patients about rare but serious complication of fistula formation in case of incompliance with follow-ups. The management plan must be individualized to each patient.

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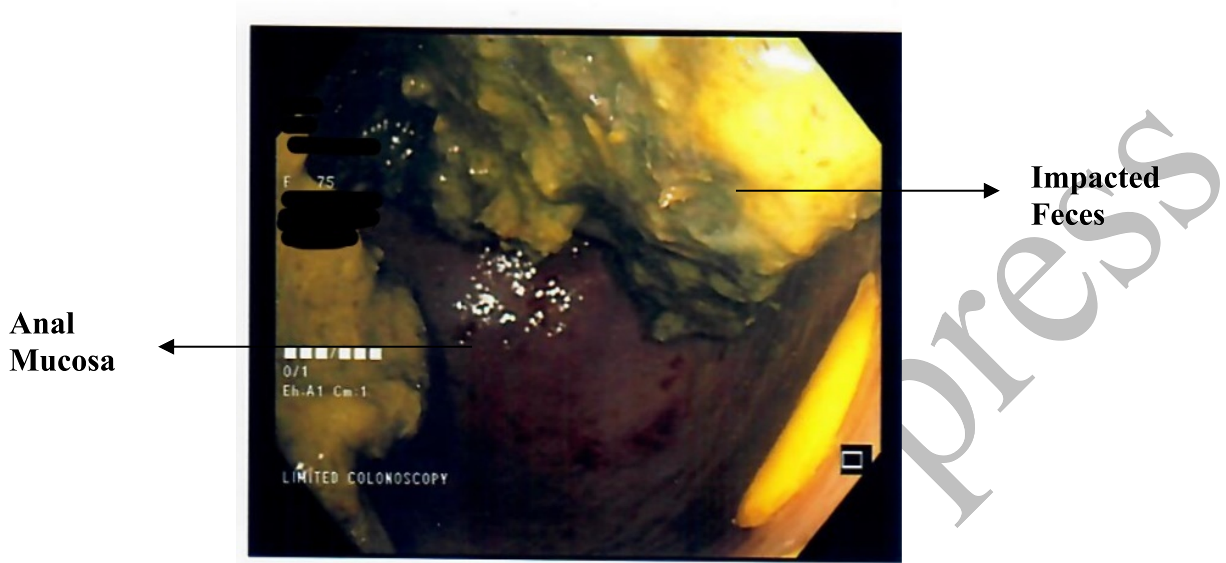
1 **FIGURES AND TABLES.**

2

3 **Figure 1.Colonoscopy view showing impacted feces.**



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7 **Figure 2. Colonoscopy view of Inflammatory mass in Rectovaginal fistula:**

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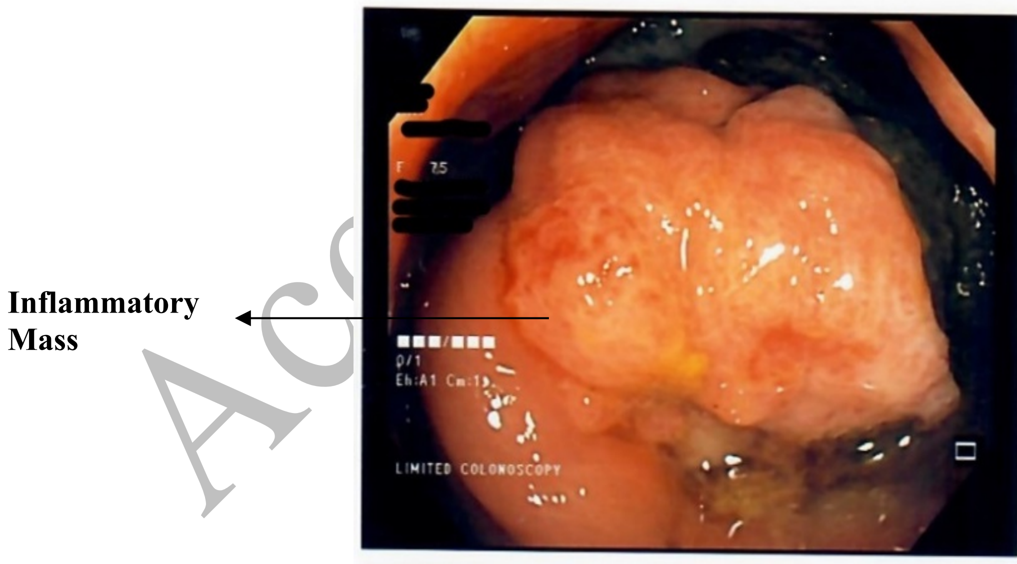

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3 **Figure 3. X-ray pelvis (antero-posterior view) showing displaced Ring pessary as represented by black**
4 **arrow.**
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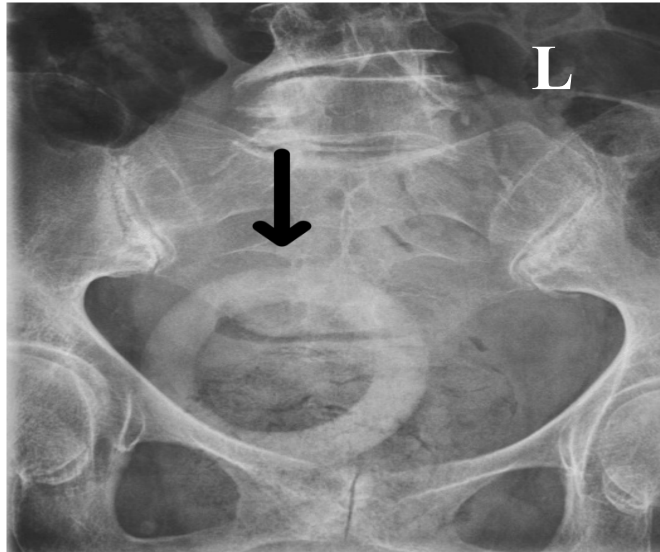

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7 **Figure 4. Showing the pathway of formed Rectovaginal Fistula through passage of finger as represented**
8 **by white arrow.**
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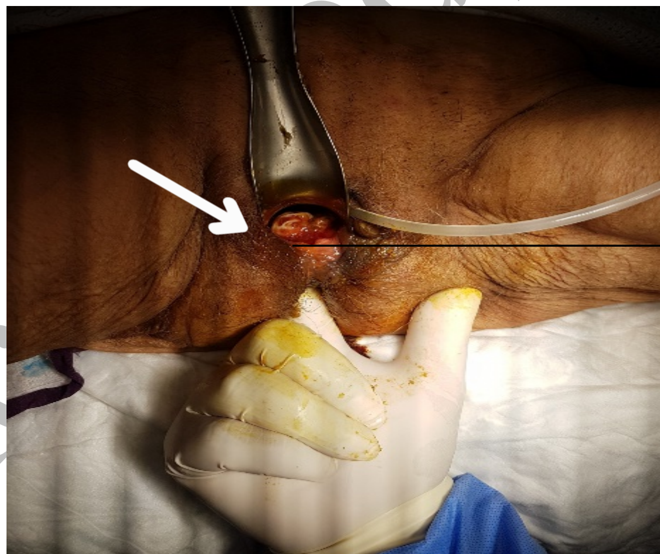

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26 **Figure 5. Shows Dysfunctioning Colostomy (Reference: Wikipedia)**

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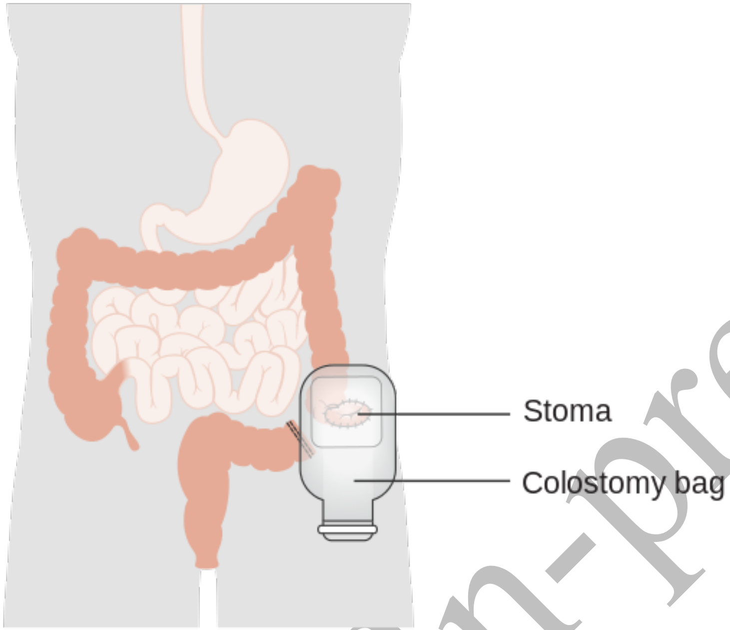
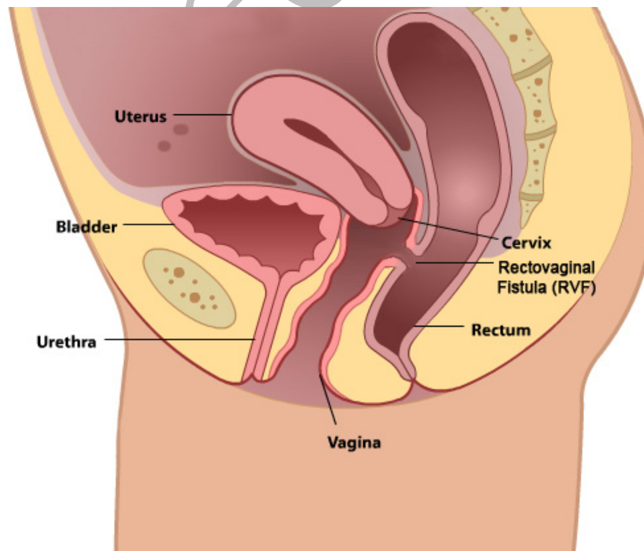


Figure 6. Shows rectovaginal fistula (Reference: gynecologicalsurgery.com)



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