

Case series: Vaginal pessary for pelvic organ prolapse and its association with vaginal cancer

Albert Chao Chiet Tan, MRCOG¹, Mohamad Faiz Bin Mohamed Jamli, MOG²

¹Obstetrics and Gynaecology Department, Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu, Malaysia,

²Obstetrics and Gynaecology Department, Hospital Tuanku Ja'afar, Seremban, Negeri Sembilan, Malaysia

SUMMARY

Vaginal pessaries have long been used in the management of pelvic organ prolapse as an alternative option for surgery. Vaginal cancer is a very rare form of gynaecological malignancy, and its association with vaginal ring pessaries has yet to be clearly established. We examined the cases of vaginal cancers in a tertiary state hospital for the last three years and found four cases of vaginal cancers, in which three of these cases were associated with a long history of using vaginal ring pessary for pelvic organ prolapse. Two of them had defaulted follow-up and presented with a vaginal mass and vaginal bleeding. These two cases did not have evidence of distant metastases, one of them underwent surgical removal of the tumour and radiotherapy, whilst the other case was initially given neoadjuvant chemotherapy, but the patient died prior to her planned surgery. The third patient declined further investigation and treatment after she was diagnosed with vaginal cancer. In conclusion, such potential serious long term complication from vaginal pessary should be informed prior to its insertion, it is also imperative to ensure compliance to regular follow-up for patients on vaginal pessaries, and to biopsy any suspicious chronic vaginal ulcers.

KEYWORDS:

Vaginal pessary, ring pessary, vaginal carcinoma, pelvic organ prolapse

INTRODUCTION

Vaginal pessaries have long been used in the management of pelvic organ prolapse as an alternative option for surgery. One of the earliest documented use of such pessary was around 400 B.C. in which half a wine-soaked pomegranate was inserted into the vagina to reduce a prolapse.¹ Pessaries are now synthetically made from medical grade silicone with various shapes and sizes.¹ Vaginal cancers are rare and constitute about 2% of all gynaecological malignancies.^{2,3} In order for a tumour to be considered a primary vaginal carcinoma, the primary site of growth should only be in the vagina; the cervix and vulva should not be involved and there should be no evidence of metastases from elsewhere.² There has been limited evidence for the exact aetiology of vaginal cancers. However, it is known to be more common in older women, and the other factors that are associated with vaginal cancer include Human Papilloma Virus (HPV) infection, chronic irritation, and irradiation. The commonest

type of vaginal cancer is squamous cell carcinoma.² Vaginal intra-epithelial neoplasia (VAIN) is the precancerous stage for such cancer but there has not been any established routine screening programme for vaginal cancer.^{2,3} As vaginal cancers are rare, the treatment for such cancers is often complex, individualised and drawn from previous experience in the centre.³ We examined the cases of primary vaginal cancers in our centre since 2018 and found four of such cases, in which three of them were associated with long term use of the vaginal ring pessary; we have outlined these cases and our management approach in the following case description.

CASE DESCRIPTION

Case 1

An 81-year-old Malay woman who initially presented to our urogynaecology clinic 4 years ago with complaints of prolapse symptoms. She had noted a mass protruding through the vagina for 10 years which had been worsening in the past two years. There was no history of per vaginal bleeding, urinary incontinence, or pain. She had four previous vaginal deliveries in the past and had been menopausal 30 years ago. Her other medical illnesses include diabetes mellitus and hypertension. Her body mass index (BMI) was 26. Her last pap smear done more than 10 years ago was normal. Upon vaginal examination, there was a Stage 4 uterine prolapse which was completely reducible. There was no evidence of ulceration, cystocoele or rectocoele.

Subsequently, after counselling, a size 80mm ring pessary was inserted into the vagina for the management of the prolapse. She was then seen every 4-6 months in the urogynaecology clinic for routine change of pessary and vaginal examination. During each visit, she did not complain of any vaginal bleeding and the vaginal examination was unremarkable.

However, after about two years of regular follow-up with the urogynaecology clinic, she defaulted her subsequent clinic appointments. Around two years later, she presented to the emergency gynaecology services for having acute onset of vaginal bleeding. Upon vaginal examination, a neglected ring pessary was removed and there was a vaginal wall ulcer in the posterior fornix measuring 3x3cm. An urgent biopsy was taken, and the histopathological examination results showed a well differentiated squamous cell carcinoma.

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Corresponding Author: Albert Chao Chiet Tan

Email: alberttancc28@gmail.com

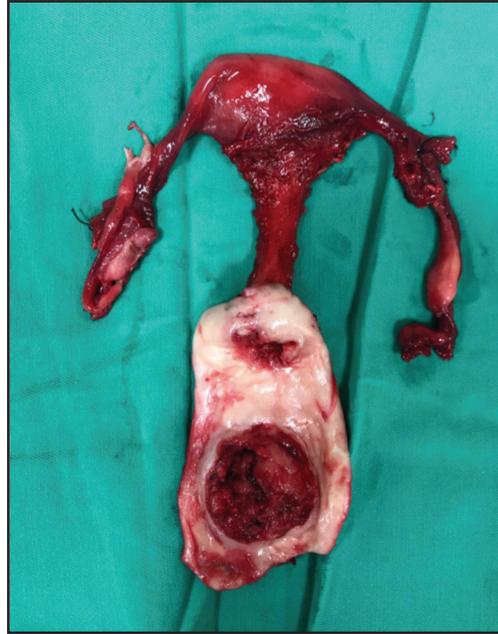


Fig. 1: The uterus, fallopian tubes, ovaries, cervix and vaginal tumour specimen from the surgery showing that the tumour is confined to the vaginal mucosa away from the cervix.



Fig. 2: Vaginal tumour before chemotherapy (left) and after chemotherapy (right).

CT scan showed bulky and heterogenous cervix with poor demarcation with base of urinary bladder. Presence of a heterogenous lesion possibly in the uterine wall which may represent a uterine fibroid. There were also bilateral ovarian cysts. Cystoscopy showed no tumour invasion to the bladder.

She subsequently, underwent a vaginal hysterectomy and bilateral salpingo-oophorectomy, sacrospinous fixation, anterior and posterior pelvic floor repair, as shown in Figure 1. Histopathological examination showed that the tumour was a moderately differentiated keratinising squamous cell

carcinoma with clear surgical margins, the paravaginal tissue was not involved, the ovaries, uterus and other structures were negative for malignancy. Subsequently, she underwent vaginal brachytherapy and 25 fractions of external beam radiotherapy.

However, a repeat CT scan done four months after completion of radiotherapy showed that there was a tumour recurrence at the vaginal vault with bilateral hydronephrosis. She declined further treatment or investigations, and eventually died at home a few months later.

Case 2

A 72-year-old Indian woman para 6, who presented with a mass protruding through the vagina for two days with one week history of dry cough. She has history of uterine prolapse for 15 years which was managed with vaginal ring pessary however this pessary was removed five years ago due to a vaginal ulcer and she had defaulted follow-up subsequently. She attained menopause at the age of 50 years and had no regular pap smears done previously. Her relevant medical illnesses include hypertension on amlodipine, bisoprolol, and dyslipidaemia on simvastatin. She had two previous surgeries in the past- one previous lower segment caesarean section and one midline laparotomy for renal calculi. She was a widow for the past 30 years and was currently living with her eldest daughter. She was a non-smoker and did not take alcohol. Her BMI was 19.

Upon examination of the vagina there was a Stage 3 uterine prolapse with a foul smelling friable fungating mass on the left vaginal wall measuring 5x3cm. There was presence of stress urinary incontinence. A biopsy of the specimen showed a well differentiated squamous cell carcinoma of the vagina. CT scan showed squamous cell carcinoma confined to a uterine prolapse with no distant metastases. Cystoscopy showed no tumour invasion of the bladder.

She was planned for neoadjuvant chemotherapy with paclitaxel and carboplatin prior to a vaginal hysterectomy, bilateral salpingo-oophorectomy, colporrhaphy and sacrospinous fixation. After completing the first and second cycle of neoadjuvant chemotherapy, the tumour size significantly reduced as shown in Figure 2. She went on to complete six cycles of neoadjuvant chemotherapy, and was then planned for a vaginal hysterectomy, bilateral salpingo-oophorectomy and pelvic floor reconstruction. Unfortunately, prior to the planned surgery, she had atrial fibrillation, and she was eventually found unconscious and died at home before the surgery.

Case 3:

A 98-year old Malay woman, para 7 who was initially admitted seven years earlier for symptoms of acute urinary retention, was found to have a stage 4 uterine prolapse. Speculum examination was otherwise normal, and a ring pessary size 71mm was inserted. She has a known history of Alzheimer's disease, and requires a wheelchair to mobilise. She had good social support from her daughter for outpatient follow-up. She was given regular follow-up in the urogynaecology outpatient department. She was seen every 4 to 6 monthly by the urogynaecology team, her ring pessary was cleaned and changed during each visit and there were no abnormalities documented throughout her follow-up.

After having been on the pessary for seven years, she was admitted to the gynaecology ward for complaints of vaginal bleeding. Upon further assessment by the gynaecology team, after removal of the ring pessary, a friable induration measuring 4x3cm was seen in the posterior fornix. The parametrium was normal, the cervix appeared atrophied. The mass was biopsied, and the histopathological examination showed a well differentiated squamous cell carcinoma of the vagina. She was then offered further

imaging investigation but both patient and her daughter declined this. She died about a year later.

DISCUSSION

Vaginal ring pessary is one of the commonest managements for women with pelvic organ prolapse. It has been regarded as one of the first line treatment due to its simplicity and widespread availability.⁴ Superficial vaginal erosion is the most common reported complication from vaginal pessary, 8.9%, vaginal discharge and infection occur in around 2.5% of women using vaginal pessaries.^{4,5}

There are several types of pessaries and they can generally be classified as supportive or space occupying pessaries. These two types of pessaries may come with or without support to reduce urinary incontinence.^{4,5} Ring pessaries comes under supportive pessaries and are easier to dislodge compared to space- occupying pessaries such as Gellhorn or shelf pessaries.^{4,5} Serious complications such as fistulas, vaginal or cervical cancers are rare but have been reported in cases of neglected vaginal pessary users.⁴ Formation of vesicovaginal fistulas is in fact more common with the use of Gellhorn and shelf pessaries.⁴

Much controversy has remained with regards to the optimal follow-up for the use of such pessary. In a recent prospective cohort study done in 2020, they examined for the most optimal duration for follow-up and the effectiveness of cleaning the vaginal pessary in reducing the risk of vaginal pain, discharge and irritation.⁶ The authors found that there was no difference for cleaning the vaginal pessary and not cleaning it, there was also no difference for pessary related side effects for the studied change intervals of 3 months and 9 months.⁶

For our three cases, we suspected that the cancer actually originated from a non-healing ulcer on the vaginal tissue which resulted from the use of vaginal pessary. This factor combined with age, existing medical illness such as diabetes, and poor follow-up may have given the opportunity for the tissue to undergo chronic inflammatory changes, metaplasia, and subsequently dysplastic changes. There may have been the presence of concomitant Human Papillomavirus (HPV) infection which may have contributed to such cellular changes as well. Clinicians should always take into consideration the potential complication of vaginal cancer whenever vaginal pessaries are used to treat pelvic organ prolapse. During speculum examination, the vagina should be thoroughly examined for any ulcers or erosions, and consideration given for a tissue biopsy in such circumstances. Women with pelvic organ prolapse who are unable to attend follow-up should be offered other management options such as surgery. Clinicians should also be aware that such vaginal tumour can potentially occur even with regular follow-up.

CONCLUSION

It is therefore imperative to ensure that patients on vaginal pessary for pelvic organ prolapse is compliant to follow-up, they should also be informed regarding the potential serious long term complications from the use of vaginal pessary prior

to its insertion. The vagina should also be thoroughly examined during each follow-up for any suspicious vaginal ulcers, and such ulcers should be biopsied.

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