The Egyptian Journal of Hospital Medicine (October 2023) Vol. 93, Page 7716-7722

Primary Vaginal Melanoma: A Rare and Aggressive Entity, A Radical Hystero-Vaginectomy as a Compromise Treatment Option

Mohamed Ayaty[1*], Haitham Abdel Wahab[2]

[1]Gyne-oncology Department, National Cancer Institute, Cairo, Egypt

[2] Gyne-oncology Department, El-Galaa Maternity Teaching Hospital, Cairo, Egypt

***Corresponding Author**: Mohamed Ayaty, **Mobile:** (+20)01004364499,

Email: mohamedayaty195@gmail.com, **ORCID ID:** 0000-0002-6230-7345

ABSTRACT

Background: The greatest outcomes of primary vaginal melanoma have been associated with surgery, either alone or in combination with adjuvant therapy, making it the preferred course of treatment for primary malignant vaginal melanoma.

Objectives: We suggest describing the radical hystero-vaginectomy approach as a compromise between pelvic exenteration operations and conservative excision.

Material and Methods: This study was carried out in National Cancer Institute and El Galaa Maternity Teaching Hospital through the period from January 2018 and January 2022. The study included 8 cases with different ages and different complaints, sharing the same diagnosis of primary vaginal melanoma. They had different surgical approaches; conservative (4 cases) or radical surgeries (4 cases) with different results. The surgical outcomes were analyzed and determining of surgical technique was described.

Results: The mean age of our patients was 50.6 years. The most common initial complaint was abnormal vaginal bleeding (6 patients), The most common site of lesion was left lateral wall (5 patients) and posterior wall (5 patients) of vagina. The depth of invasion was greater than 1 cm in only one patient but unrecorded in 7 patients. The clinical and surgical staging of the disease according to the international federation of gynecology and obstetrics (FIGO) varied between two and three. One case staged as PT4 melanoma according to the tumor node and metastases (TMN) staging due to extra margin related to anterior rectal wall was positive. Recurrence in patients underwent local excision ranged from 5 months to 15 months after surgical excision. The 2-year DFS (disease free survival) comparing the radical and the conservative treatment was 75 % versus 0 %. **Conclusions:** Upon initial diagnosis, surgery continues to be the primary therapeutic option. For vaginal melanomas, local excision is challenging and frequently not taken into consideration. We reported a radical hystero-vaginectomy as a compromise treatment option for primary vaginal melanoma that can take the place of the pelvic exenteration operation.

Keywords: Primary, Vaginal, Melanoma.

INTRODUCTION

Primary vaginal melanoma is an exceedingly uncommon gynecological cancer that accounts for less than 0.2% of all melanomas [(1)]. Despite being substantially less common, vaginal melanoma is considerably more deadly than cutaneous melanoma, with less than 30% of patients surviving five years even with treatment [(2, 3)]. Crucially, it is challenging to decide how to stage and treat this illness due to the paucity of cases seen in clinical practice and documented in the research.

Memorial Sloan-Kettering reported an updated cohort with March 2013 at the Annual Society of Gynecologic Oncology meeting, 75 vulvar and 43 vaginal melanomas over 17 years. In a recent cohort from Memorial Sloan Kettering Cancer Center. The median age of patients with both vaginal and vulvar melanoma was 62 years. The range for vulvar melanoma was 24 to 88 years, while the range for vaginal melanoma was 38 to 86 years [(4)].

The best outcomes have been associated with surgery, either alone or in combination with adjuvant therapy, making it the preferred course of treatment for primary malignant vaginal melanoma [(2, 5, 6, 7)].

Conservative (broad local excision and partial vaginectomy) and radical (hysterectomy, total vaginectomy or vulvectomy, or pelvic exenteration) surgical techniques are used to treat vaginal melanoma [(5, 8, 9)]. Wide local excision, as opposed to alternative treatment choices like radiation or chemotherapy, produced comparable if not superior results in the majority of cases with early illness. Given the rarity of lymph node involvement, lymphadenectomy is seldom performed and is dangerous in all other circumstances [(5, 10)].

MATERIALS AND METHODS

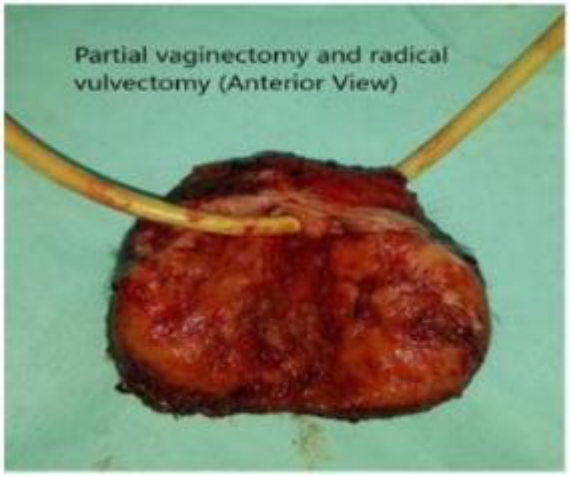
Eight individuals had V. melanoma between 2018 and 2022, at the National Cancer Institute and EL-Galaa Maternity Teaching Hospital. Primary vaginal melanoma was determined by biopsies on the patients from the lesion. To enable analysis for current complaints, stage, initial lesion location and size (in cm), lymph node involvement (inguinal or pelvic), type of resection (conservative or radical), recurrence, and quality of life concerns were investigated.

Description of surgical technique:

Conservative procedure was wide local excision of the melanotic lesion of vagina with or without inguinal lymph node dissection unilaterally or bilaterally according to site of the lesion and clinical presentation (Fig. 1).

Received: 17/05/2023
Accepted: 18/07/2023

Lateral view



Anterior view

Figure (1): Conservative surgery.

Radical procedure after the induction of general anesthesia, at the beginning of the operation, the patient was placed in a dorsal supine position. A Foley catheter was inserted into the bladder (Fig. 2).

Figure (2): Gross pathology of vaginal melanoma.

Midline incision, ligation of the ovarian arteries on both sides. Dissection of ureter and ligation of uterine arteries on both sides then dissection of bladder and urethra as possible as we can if there is no invasion of urethra or bladder neck from uterine body, cervix and anterior vaginal wall until fourchette. Ligation of utero sacral ligaments on both sides, opening of Douglas pouch with blunt dissection of the rectum from the posterior vaginal wall and perineal body (Fig. 3).

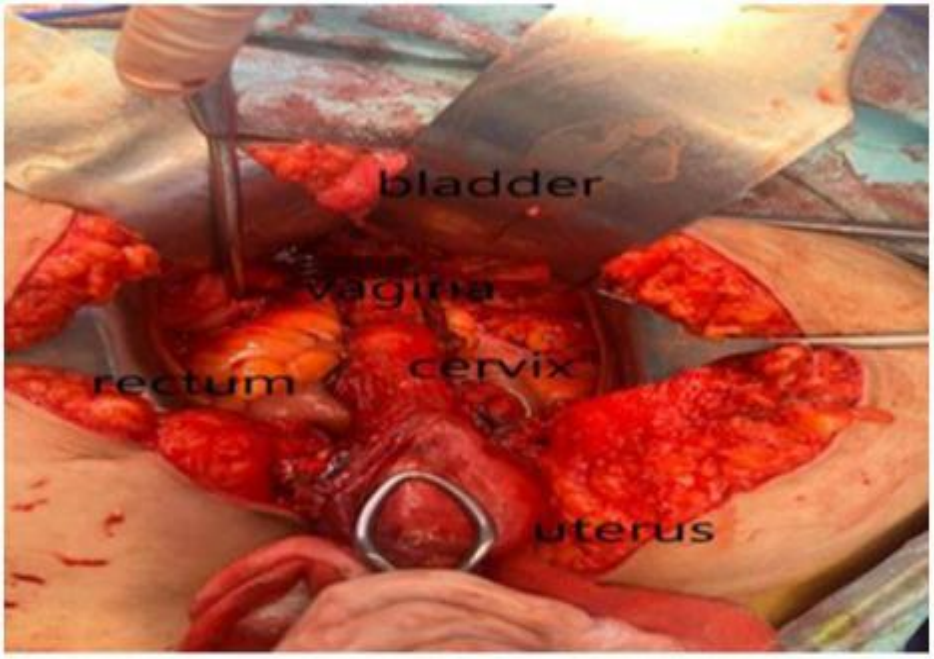


Figure (3): Midline exploration view of radical procedure

Bilateral iliac lymph node dissections. Hemostasis done and then placing patient in dorsal supine lithotomy position to start dissection of vaginal walls from surroundings and delivery of specimen through the cavity of dissected vagina (Fig. 4). With preservation of urethra or excision of urethra and diverting the bladder neck to the skin as Indiana pouch. Freeing of omental flap based on Rt epiploic artery to fill pelvic space and support the bladder and its neck to prevent prolapsing of the intestine (Fig. 5).

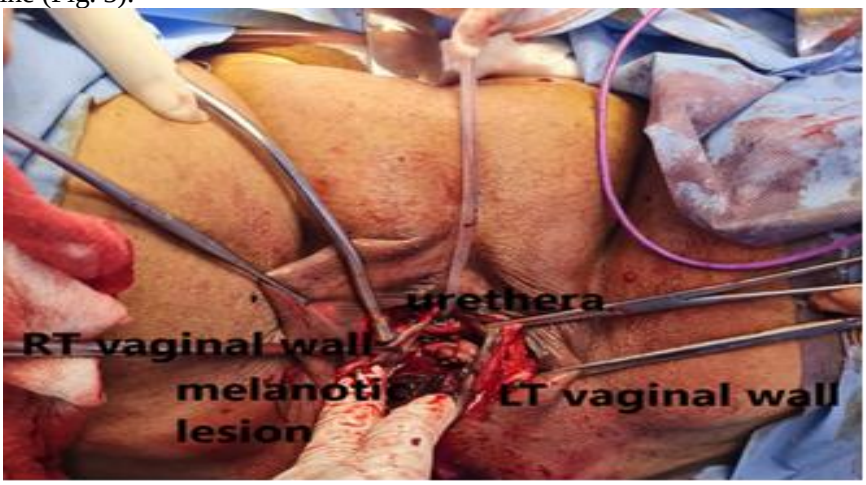


Figure (4): Dissection of lateral vaginal walls.

Figure (5): Mobilization of omental flap to support urethra, bladder and prevent intestinal prolapse

Closure of skin using prolene mattress sutures. Remaining of the ureteral catheter for three weeks (Figures 6 & 7).

Figure (6): The end shape after radical surgery.

Figure (7): The total specimen after radical hysterectomy, vaginectomy and vulvectomy.

Ethical approval: The study was approved by Cairo University's National Cancer Institute Ethics Committee. At the time of their admission, every participant consented in writing to the use of their data for medical study. The study was conducted in accordance with the Helsinki Declaration.

Statistical analysis:
This was observational study since statistical analysis could not be done due to the limited population in the study.

RESULTS
Consistent with previously reported cases, the age of our patients ranged from 40 to 63 years with a mean of 50.6 years (Table 1). The most common initial complaint was abnormal vaginal bleeding (6 patients). The most common site of lesion was left lateral wall (5 patients) and posterior wall (5 patients) of vagina. The depth of invasion was greater than 1 cm in only one patient but unrecorded in 7 patients. The clinical and surgical FIGO stage of disease varied between stages two and three. One case staged as PT4 melanoma according TMN staging because extra margin related to anterior rectal wall was positive. Recurrence in patients underwent local excision ranged from 5 months to 15 months after surgical excision. The 2-year DFS (disease free survival) comparing the radical and the conservative treatment was 75 % versus 0 %. The patients who underwent radical surgery hadn't unacceptable complications or post-operative radiation therapy that makes the radical therapy undesired. Only one patient had low output rectovaginal fistula and went back to hospital 2 weeks after discharge to be underwent temporary left colostomy and repair of fistula by maritius flap of labial pad of fat. The patient staged as PT_4 returned back to the clinic on follow up after ending radiotherapy with mass within 2 cm in maximum diameter on anterior rectal wall with stationary status and still under close follow up.

Table (1): Characteristics of the eight patients involved in the study

Patient diagnosis	Age years	Site of lesion	Size of lesion	Inguinal L.N Involvement	Iliac L.N Involvement	Stage	Procedure	Clinical presentation
1	40	Lf lat. Wall & ant. wall	2*3 cm	No	No	2	WLE	Vaginal bleeding
2	62	Post. wall	1*2 cm	No	No	2	WLE	Pruritis
3	63	Post. Wall	2*2 cm	No	No	2	WLE	Vaginal bleeding
4	43	Lf lat. Wall	3*5 cm	Yes	No	3	WLE & Lf inguinal L.N dissection	Mass
5	48	Ant. Wall & Rt lat. Wall	2*4 cm	No	No	2	Total abd. Hysterectomy& bilat. Iliac L.N dissection & total vaginectomy & complete resection of urethra with diversion of urine	Vaginal bleeding
6	51	Ant & Lf lat. Wall	3*8 cm	No	No	4	Total abd. Hysterectomy& bilat. Iliac L.N dissection & total vaginectomy	Vaginal bleeding
7	42	Ant. Wall	1*1 cm	No	No	2	Partial lower 1\3 vaginectomy & radical vulvectomy	Pruritis
8	56	Lf lat. & post. Wall	5*7 cm	No	Yes	3	Total abd. Hysterectomy& bilat. Iliac L.N dissection & total vaginectomy	Vaginal bleeding

Four patients underwent conservative management; the type of resection was wide local excision of vaginal melanotic lesion with safety margin ranged from 0.5 cm to 1 cm. One of these patients initially presented by enlarged Lt inguinal lymph node, underwent partial patient vaginectomy, Lt inguinal dissection (2\8 positive L.N) and Lt iliac lymph node dissection (0\4 negative L.N).

All of these patients received radiotherapy after initial wide local excision of vaginal lesions. Recurrence was in form of huge pelvis abdominal mass infiltrating vagina and perineum with lung metastases was reported 5 months after surgery in one case. Local residual tumor with extensive inguinal and pelvic nodal disease was reported in another case after 11 months of surgery. Bone marrow infiltration was recorded in one patient within 15 months. One case was lost follow up after 3 months of surgery and was diagnosed with local recurrence (Table 2).

The other four patients that underwent radical procedures; three underwent total abdominal hysterectomy, bilateral salpingo-oophorectomy, bilateral iliac lymph node dissection and total vaginectomy, but one patient underwent partial lower 1\3vaginectomty and radical vulvectomy. One patient out of three underwent radical procedure and iliac lymph node dissection showed nodal metastases (2\25 lymph nodes, left side). Only one case required total excision of the urethra and diversion of urine through Indiana pouch. All patients underwent conservative procedures, the tumor recurred and or metastasized within year and half.

Table (2): Failure of treatment in conservative group

Patient	**Timing of failure**	**Parrern of failure**
1	5 months	Local recurrence with lung metastases
2	11 months	Local recurrence
3	15 months	Distant metastases
4	3 months	Local recurrence

DISCUSSION

One such uncommon and extremely dangerous form of mucosal malignant melanoma is primary malignant vaginal melanoma [3, 6, 11]. only 8 patients were recorded through 4 years.

Thirty-one patients who had been diagnosed with primary vaginal melanoma had their clinical features and prognostic variables retrospectively examined by **Huang and colleagues** [3]. Vaginal hemorrhage and vaginal discharge were the most common symptoms recorded, with a median age of 58 years (range, 18 to 73 years). Our study's patients were between the ages of 40 and 63, with a mean age of 50.6. Six women reported irregular vaginal bleeding as the initial complaint.

The FIGO' guidelines for vaginal malignancies have traditionally served as the basis for the staging of vaginal melanomas. However, since tumor node and metastases (TNM) staging is generally accepted as the best approach, and melanomas are largely skin cancers, the American Joint Committee on Cancer (AJCC) guidelines began to be implemented concurrently [12, 13]. Actually, reports of primary malignant vaginal melanoma usually employ both methods [2].

The only two characteristics of the disease that have been linked to a positive prognosis are the size of the tumor and the degree of lymph node involvement. FIGO does not account for either of these factors in their approach for vaginal cancer [2, 8, 14, 15]. Additionally, although FIGO-based classifications failed to demonstrate stage-dependent differences in the outcomes, the AJCC– TNM approach was able to do [8, 15].

In our study, the clinical and surgical FIGO stage of disease varied between two and three. One case staged according TMN staging as PT4 melanoma due to that extra margin related to anterior rectal wall was positive.

Though both are mucosal forms of melanoma and are treated quite similarly, Breslow's thickness is one of the most important predictors of outcome in vulvar melanomas, but not in vaginal melanomas [8, 16, 17]. The depth of invasion was greater than 1 cm in only one patient but unrecorded in 7 patients.

Many authors believe that aggressive surgical resection is necessary even in the case of the smallest and least invasive vaginal lesions. If not, it is stated that the local recurrence could reach 80% [18, 19]. In our study, of the four patients that underwent radical procedures; three underwent bilateral salpingo-oophorectomy, bilateral dissection of iliac lymph nodes, bilateral vaginectomy, and total abdominal hysterectomy. After receiving conservative treatment, the tumors in all patients either recurred or spread within a year.

Geisler *et al.* [20] reported primary pelvic exenteration for vaginal melanoma invasive beyond 3 mm, and indicated that if the pelvic nodes were devoid of metastases, a 50% 5-year survival rate may be achieved. In our investigation, one patient out of three who had iliac lymph node dissection and a radical surgery revealed nodal metastases (2~25 lymph nodes; left side) and a two-year disease-free survival.

Therefore, it would appear that, if feasible, surgery should be part of the routine care of vaginal melanoma. Given the high frequency of multifocality and anatomic restrictions, achieving negative margins in these instances without pelvic exenteration can be challenging. It is yet unknown, though, how such

drastic surgery might affect survival in comparison with more conservative measures like adjuvant or final radiotherapy combined with minimal surgery. Thus, in some circumstances, surgery and RT may be combined [21]. Because one of the patients refused drastic surgery, we conducted conservative surgery instead of the original procedure that we chose in our study, whether it was conservative or radical.

CONCLUSION

As a compromise treatment for primary vaginal melanoma, we described that radical hystero-vaginectomy can take the place of the pelvic exenteration surgery. For vaginal melanomas, local excision is challenging and frequently should be not considered.

- **Authors' contributions:** The final manuscript was read and approved by all writers.
- **Competing interests:** No conflicting agendas.

REFERENCES

1. **Chang A, Karnell L, Menck H (1998):** The National cancer data base report on cutaneous and noncutaneous melanoma: a summary of 84,836 cases from the past decade. The American College of surgeons Commission on cancer and the American cancer Society. Cancer, 83: 1664-78.
2. **Kirschner A, Kidd E, Dewees T *et al.* (2013):** Treatment approach and outcomes of vaginal melanoma. Int J Gynecol Cancer, 23: 1484-9.
3. **Huang Q, Huang H, Wan T *et al.* (2013):** Clinical outcome of 31 patients with primary malignant melanoma of the vagina. J Gynecol Oncol., 24: 330-35.
4. **McGuire S, Frank S, Eifel P (2008):** Treatment of recurrent vaginal melanoma with external beam radiation therapy and palladium-103 brachytherapy. Brachytherapy, 7: 359–363.
5. **Miner T, Delgado R, Zeisler J *et al.* (2004):** Primary vaginal melanoma: a critical analysis of therapy. Ann Surg Oncol., 11: 34-9.
6. **Kalampokas E, Kalampokas T, Damaskos C (2017):** Primary vaginal melanoma, a rare and aggressive entity. A case report and review of the literature. In Vivo, 31: 133-40.
7. **Schmidt M, Honig A, Schwab M *et al.* (2008):** Primary vaginal melanoma: a case report and literature review. Eur J Gynaecol Oncol., 29: 285-8.
8. **Trimble E (1996):** Melanomas of the vulva and vagina. Oncology, 10: 1017-23.
9. **Piura B (2008):** Management of primary melanoma of the female urogenital tract. Lancet Oncol., 9: 973-81.
10. **Leitao M, Cheng X, Hamilton A *et al.* (2014):** Gynecologic cancer intergroup (GCIG) consensus review for vulvovaginal melanomas. Int J Gynecol Cancer, 24: 117-22.
11. **Tasaka R, Fukuda T, Wada T *et al.* (2017):** A retrospective clinical analysis of 5 cases of vaginal melanoma. Mol Clin Oncol., 6: 373-376.
12. **FIGO Committee on Gynecologic Oncology (2009):** Current FIGO staging for cancer of the vagina, fallopian tube, ovary, and gestational trophoblastic neoplasia. Int J Gynaecol Obstet., 105: 3-4.
13. **Edge S, Compton C (2010):** The American joint Committee on cancer: the 7th edition of the AJCC cancer staging manual and the future of TNM. Ann Surg Oncol., 17:1471-4.
14. **Mihajlovic M, Vlajkovic S, Jovanovic P *et al.* (2012):** Primary mucosal melanomas: a comprehensive review. Int J Clin Exp Pathol., 5: 739-53.
15. **Reid G, Schmidt R, Roberts J *et al.* (1989):** Primary melanoma of the vagina: a clinicopathologic analysis. Obstet Gynecol., 74: 190-99.
16. **Phillips G, Bundy B, Okagaki T *et al.* (1994):** Malignant melanoma of the vulva treated by radical hemivulvectomy. A prospective study of the gynecologic Oncology Group. Cancer, 73: 2626-32.
17. **Laga A, Haefner H, Granter S (2018):** Melanocytic Lesions of the Vulva. In: Crum CP, Nucci MR, Howitt BE, eds. Diagnostic gynecologic and obstetric pathology. 3rd ed. Philadelphia: Content Repository Only, Pp: 181–96. https://www.us.elsevierhealth.com/diagnostic-gynecologic-and-obstetric-pathology-9780323447324.html
18. **Gökaslan H, Sişmanoğlu A, Pekin T *et al.* (2005):** Primary malignant melanoma of the vagina: a case report and review of the current treatment options. Eur J Obstet Gynecol Reprod Biol., 121: 243-248.
19. **Irvine W, Bliss S, Rice L *et al.* (1998):** Malignant melanoma of the vagina and locoregional control: radical surgery revisited. Gynecol Oncol., 71: 476-480.
20. **Geisler J, Look K, Moore D *et al.* (1995):** Pelvic exenteration for malignant melanoma of the vagina or urethra with over 3 mm of invasion. Gynecol Oncol., 59: 338-341.
21. **Postow M, Hamid O, Carvajal R (2012):** Mucosal Melanoma: Pathogenesis, Clinical Behavior, and Management. Curr Oncol Rep., 14: 441-448.