CASE REPORT

Endocervical adenocarcinoma in early pregnancy managed with neoadjuvant chemotherapy and delayed surgery: A case report

Rohaida Zakaria, MObGyn, Tengku Nur Amirah, MBBS, Anuradha Suberamaniam, MRCOG

Department of Obstetrics and Gynaecology, Hospital Tengku Ampuan Rahimah, Klang, Selangor, Malaysia

SUMMARY

Endocervical adenocarcinoma during pregnancy is rare and poses significant diagnostic and management challenges. The optimal management approach remains uncertain due to the limited number of reported cases. Managing this condition during pregnancy requires a careful balance between effective oncologic treatment and preserving fetal health. We present the case of a 34-year-old woman, gravida 2 para 0+1, diagnosed with FIGO stage IIA1 HPV-associated endocervical adenocarcinoma at 12 weeks gestation. Following multidisciplinary discussion, neoadjuvant chemotherapy was initiated. She underwent a cesarean delivery at 35 weeks and 4 days of gestation, followed by radical hysterectomy, bilateral salpingectomy, ovarian transposition, and pelvic lymphadenectomy. Postoperative histopathology showed no lymphovascular invasion. The patient remains disease-free 14 months after treatment.

INTRODUCTION

Cervical cancer during pregnancy is a rare but serious condition that presents significant challenges in terms of diagnosis and management. It occurs in approximately 1.4 to 4.6 per 100,000 pregnancies, with adenocarcinoma representing about 10-20% of those cases.[1] The unique circumstance of a growing fetus adds complexity to the diagnostic process and treatment decisions. Endocervical adenocarcinoma, often linked to high-risk human papillomavirus (HPV) types 16 and 18, may be aggressive and require early identification and management. Whether pregnancy can accelerate the progression of cancer is still controversial. Some scholars have found that the levels of estrogen, progesterone, and human chorionic gonadotropin during pregnancy are positively correlated with HPV 16 and HPV 18 infection, which indirectly suggest that pregnancy may promote the progression of cervical cancer.[2] Some studies have shown that the lymphatic circulation and blood flow of the reproductive organs of pregnant women increases, the immunity of the body decreases in the early stage of pregnancy and cervical dilation after delivery, and other factors may accelerate the metastasis of tumours, thereby accelerating the development of cervical cancer.[3]

Currently, there is no standardized treatment protocol for cervical cancer in pregnancy. Most management decisions are based on expert consensus and multidisciplinary cancer case conferences, with existing guidelines primarily focused on squamous cell carcinoma.[4,5] Key factors influencing management include gestational age, tumour stage and histology, the presence or absence of metastases, and the patient's preferences regarding the continuation of pregnancy.

Herein, we present a case of FIGO stage IIA1 HPV-associated endocervical adenocarcinoma diagnosed during the first trimester. This report highlights the role of neoadjuvant chemotherapy (NACT) and coordinated surgical planning in achieving favorable maternal and fetal outcomes.

CASE PRESENTATION

A 34-year-old woman, gravida 2 para 0+1, presented to the gynecology clinic following an abnormal cervical cytology report suggestive of atypical glandular cells favoring neoplasia. She had previously missed her follow-up appointment and was found to be 6 weeks and 5 days pregnant during the clinic visit. Repeat cytology and HPV DNA testing confirmed adenocarcinoma in situ (AIS) and the presence of high-risk HPV types 16 and 18. Colposcopic examination revealed a suspicious cervical lesion. A biopsy was taken, and histology suggested AIS with the possibility of invasion.

At 12 weeks of gestation, a large loop excision of the transformation zone (LLETZ) was performed (Fig.1). Histopathological examination confirmed HPV-associated endocervical adenocarcinoma in the background of AIS. The radial margin was involved, and lymphovascular space invasion (LVSI) was present. The depth of stromal invasion measured 4.5 mm with an 8 mm lateral spread. An additional biopsy from the posterior fornix also indicated adenocarcinoma (Fig.1a).

Subsequent imaging including MRI of the pelvis and low-dose CT of the thorax showed no evidence of local or distant metastasis. The diagnosis was staged as FIGO stage IIA1 cervical adenocarcinoma. After detailed discussions involving gynecologic oncology, radiology, pathology, and maternal-fetal medicine, the patient and her family opted to continue with the pregnancy.

A management plan was formulated involving four cycles of neoadjuvant chemotherapy with carboplatin and paclitaxel. Chemotherapy was administered during the second and third

This article was accepted: 31 October 2025
Corresponding Author: Rohaida Zakaria
Email: rohaidazakaria@moh.gov.my

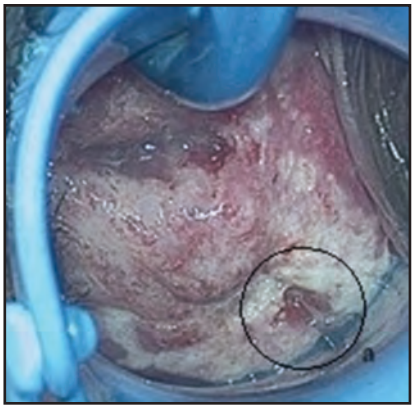

Fig. 1: Colposcopic image a 12 weeks gestation, prior to LLETZ
a: The biopsy site is located at the posterior vaginal fornix

trimesters, aiming to control tumor progression while allowing the pregnancy to continue to a viable gestational age. Fetal development was closely monitored, and no complications were reported during chemotherapy.

At 35 weeks and 4 days, she underwent an elective cesarean section. A healthy male infant weighing 2500 grams was delivered with Apgar scores of 8 and 9 at one and five minutes, respectively. Following delivery, the patient underwent a radical hysterectomy, bilateral salpingectomy, ovarian transposition, and pelvic lymphadenectomy. Histopathological analysis revealed a well-differentiated adenocarcinoma with a maximum depth of invasion of 3 mm and no evidence of lymphovascular space invasion. Surgical margins were clear, with the closest margin measuring 12 mm. No adjuvant therapy was deemed necessary.

Postoperatively, the patient had an uneventful recovery and was discharged after seven days. At the time of this report, 14 months postoperatively, she remains disease-free with no evidence of recurrence. She continues regular follow-up with gynecologic oncology and receiving psychosocial support for survivorship care.

DISCUSSION

Management of cervical cancer during pregnancy involves careful consideration of multiple factors including gestational age, cancer stage, histology, and patient preference. This case underscores the importance of early cervical screening and diagnostic follow-up. LLETZ was essential in confirming the diagnosis and guiding further management. Although cold knife conization is typically preferred for diagnosing and managing AIS or suspected invasive disease, adjustments are often necessary during pregnancy to reduce procedural risks. In this case, LLETZ was selected as a safer alternative due to its lower risk of hemorrhage and cervical incompetence, especially when performed during the first trimester. The procedure was completed at 12 weeks of gestation without complication, enabling definitive histological assessment while preserving pregnancy viability. This case supports growing evidence that, when clinically indicated and performed with careful technique, LLETZ can be a safe and effective diagnostic approach during early pregnancy in appropriately selected patients.[6]

Neoadjuvant chemotherapy (NACT) represents a viable treatment option for cervical cancer during pregnancy when preservation of gestation is prioritized. Administration of carboplatin and paclitaxel during the second and third trimesters has been shown to be relatively safe and effective in delaying tumour progression while allowing fetal maturity.[7] In this case, coordinated planning enabled both optimal oncologic control and timely caesarean delivery, followed by definitive surgical management.

Although fertility-sparing options such as interval trachelectomy or large conization may be considered in selected patients with early-stage disease (≤IB1), these were not suitable in this case. The patient had FIGO stage IIA1 adenocarcinoma with vaginal involvement and lymphovascular space invasion, which precluded conservative surgery. Current National Comprehensive Cancer Network (NCCN) and European Society of Gynaecological Oncology (ESGO) guidelines recommend radical hysterectomy with pelvic lymphadenectomy or concurrent chemoradiotherapy for this stage.[4,5] Radical surgery was therefore chosen to achieve complete tumour resection and staging while avoiding the long-term morbidity of pelvic radiation in a young patient.

These findings align with published reports supporting the feasibility of delaying definitive surgery until fetal maturity in carefully selected patients. For instance, Guo et al. described a 36-year-old woman diagnosed with stage IB3 cervical cancer at 13 weeks gestation who underwent NACT, followed by caesarean section and radical hysterectomy at 36 weeks, with favourable maternal and neonatal outcomes.[8] Similarly, Li et al. reported two cases of locally advanced cervical cancer managed with chemotherapy and delayed surgery, both resulting in live births and no recurrence during follow-up.[9] Collectively, these cases, including our own, underscore the potential of individualized, patient-centred treatment strategies in achieving favourable outcomes without compromising maternal or neonatal safety.

Long-term follow-up data from similar cases have also been reassuring. Children exposed to platinum-based chemotherapy during the second and third trimesters generally demonstrate normal physical growth and neurodevelopmental outcomes, with no significant increase in congenital anomalies. Nevertheless, ongoing pediatric follow-up remains important to monitor for potential late effects.

Ovarian transposition was considered appropriate given the patient's young age and the absence of ovarian metastasis. Studies suggest ovarian preservation may be oncologically safe in early-stage adenocarcinoma, though more evidence is required.10 Ultimately, the patient's values and preferences played a vital role in decision-making, supported by a multidisciplinary team.

According to current guidelines, including those from the NCCN and the ESGO, patients with stage IIA1 cervical cancer post-radical hysterectomy are generally recommended to receive adjuvant radiotherapy, particularly in the presence of risk factors such as lymphovascular space invasion (LVSI), deep stromal invasion, or close surgical margins.[4,5] However, in this case, adjuvant treatment was not administered due to favourable postoperative histopathological findings, including clear surgical margins, a maximum stromal invasion depth of only 3 mm, and absence of LVSI. This individualized approach highlights the importance of tailoring treatment to each patient's clinical and pathological profile. Although omission of adjuvant therapy diverged from standard protocols, the patient remains disease-free 14 months postoperatively. Continued close surveillance remains crucial, and this case contributes to growing discussions on de-escalation of therapy in selected patients with favourable prognostic features.

The main limitation of this report is its single-case nature, which restricts generalizability. However, detailed documentation of such rare cases remains valuable in guiding clinical decision-making and expanding available evidence on safe oncologic management during pregnancy.

Importantly, this case reinforces the principle that management of cervical cancer in pregnancy must be highly individualized. Factors such as gestational age at diagnosis, tumour staging, histopathological characteristics, and the patient's personal wishes all play critical roles in decision-making. The omission of adjuvant therapy, guided by favourable pathological findings, further supports the evolving discourse on treatment de-escalation in selected low-risk patients. As more cases are reported and long-term outcomes become clearer, collective experience will help refine future guidelines and better define optimal management strategies for cervical cancer in pregnancy.

CONCLUSION

Cervical cancer diagnosed during pregnancy can be safely managed through a multidisciplinary and individualized approach. Neoadjuvant chemotherapy during the second and third trimesters allowed fetal maturity without compromising oncologic outcomes, and timely definitive surgery achieved complete disease control.

ACKNOWLEDGMENT

We would like to acknowledge all the healthcare workers of our hospital who were involved in the management of this patient.

DECLARATION

Written informed consent for publication and the use of accompanying images was obtained from the patient. All authors declare no conflicts of interest. No external funding was received for this work.

REFERENCES

1. Amant F, Berveiller P, Boere IA, Cardonick E, Fruscio R, Fumagalli M, et al. Gynecologic cancers in pregnancy: guidelines based on a third international consensus meeting. Ann Oncol 2019; 30(10): 1601-12.
2. Zhang S, Zhou L. Progress in diagnosis and treatment of pregnancy complicated with cervical cancer. J Pract Med 2018; 25(4): 400-2.
3. Ou GM. The effect of pregnancy with cervical cancer on mother and child and the principle of diagnosis and treatment. Adv Mod Obstet Gynecol 2008; 17(1): 64-6.
4. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Cervical Cancer. Version 1.2024 [Internet]. Plymouth Meeting (PA): NCCN; 2024 [cited 2025 May 20]. Available from: https://www.nccn.org/guidelines/guidelines-detail?category=1&id=1426
5. Cibula D, Raspollini MR, Planchamp F, Centeno C, Chargari C, Felix A, et al. ESGO/ESTRO/ESP guidelines for the management of patients with cervical cancer – update 2022. Int J Gynecol Cancer 2023; 33(5): 755-66.
6. Sagi-Dain L, Lavie O, Auslender R, Sagi S. Loop electrosurgical excision procedure (LEEP) during pregnancy: a systematic review. Gynecol Oncol 2020; 157(3): 785-91.
7. Sorouri K, Fernandez M, Cardonick EH. Patient-centered care in management of cancer during pregnancy. Am Soc Clin Oncol Educ Book 2023; 43: e100037.
8. Guo Y, Zhang D, Li Y, Wang Y. A case of successful maintained pregnancy after neoadjuvant chemotherapy plus radical surgery for stage IB3 cervical cancer diagnosed at 13 weeks. BMC Pregnancy Childbirth 2020; 20(1): 202.
9. Li J, Wang LJ, Zhang BZ, Peng YP, Lin ZQ. Neoadjuvant chemotherapy with paclitaxel plus platinum for invasive cervical cancer in pregnancy: two case report and literature review. Arch Gynecol Obstet 2011; 284: 779-83.
10. Cheng H, Huo L, Zong L, Kong Y, Yang J, Xiang Y. Oncological outcomes and safety of ovarian preservation for early-stage adenocarcinoma of cervix: a systematic review and meta-analysis. Front Oncol 2019; 9: 777.