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Case Report

Management of Stage IIA2 Cervical Cancer in the Third Trimester: A Case Report and Literature Review

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Abstract

Background: Cervical cancer remains one of the most frequently diagnosed gynecological malignancies during pregnancy, presenting a complex clinical dilemma when detected in the second trimester. The management of Stage IIA2 disease, defined by a bulky tumor size of ≥ 4cm without parametrial invasion, is particularly challenging. Standard interventions such as concurrent chemoradiation or immediate radical hysterectomy are incompatible with the preservation of the fetus. Consequently, Neoadjuvant Chemotherapy (NACT) has emerged as a therapeutic strategy to arrest tumor progression and delay delivery until fetal maturity is achieved. Case Presentation: We report the case of a 38-year-old multiparous female (G3P2) who was diagnosed with Stage IIA2 cervical cancer at 25 weeks of gestation. Following a multidisciplinary consultation, the patient was treated with NACT using a Paclitaxel and Carboplatin regimen to control the disease while allowing the fetus to mature. The patient completed four cycles of chemotherapy and was admitted to the obstetrics department at 37 weeks and 1 day of gestation. Pre-operative Magnetic Resonance Imaging (MRI) revealed a residual cervical mass measuring 3.1 x 4.1 x 2.8cm with invasion extending to the upper third of the vagina. Crucially, imaging confirmed the absence of parametrial invasion or pelvic lymphadenopathy. An elective Cesarean section was performed. The procedure resulted in the delivery of a healthy male neonate weighing 2700 grams, with Apgar scores of 8 at 1 minute and 9 at 5 minutes. The maternal postoperative course was uneventful, and the patient was subsequently transferred for definitive oncological management. Conclusion: This case illustrates that the administration of NACT is a viable and effective management strategy for Stage IIA2 cervical cancer diagnosed during the second trimester. This approach facilitates the prolongation of pregnancy to term, thereby minimizing neonatal morbidity associated with preterm birth, without compromising maternal oncological outcomes.

Keywords

Cervical Cancer, Pregnancy, Stage IIA2, Neoadjuvant Chemotherapy, Cesarean Section

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1. Introduction

Cervical cancer remains the most frequently diagnosed gynecological malignancy during pregnancy [1], with an estimated incidence of 1.6 to 11.1 cases per 100,000 pregnancies [2]. Due to the increasing trend of delayed childbearing in modern society, the coincidence of malignancy and pregnancy is expected to rise, presenting clinicians with a complex ethical and medical dilemma [3]. The management of cervical cancer in pregnancy requires a multidisciplinary approach that meticulously balances maternal oncological safety with fetal viability. While early-stage disease (Stage IA-IB1) often allows for fertility-sparing surgery or conservative management, locally advanced disease presents significant therapeutic challenges [4].

A critical update in the management of this malignancy was the revision of the International Federation of Gynecology and Obstetrics (FIGO) staging system in 2018. This revision stratified Stage IIA into IIA1 (tumor size < 4.0cm) and IIA2 (tumor size ≥ 4.0cm), explicitly recognizing tumor dimension as an independent prognostic factor [5]. Stage IIA2, characterized by a bulky exophytic mass invading the upper vagina without parametrial involvement, carries a higher risk of lymph node metastasis and recurrence compared to smaller tumors [6]. In the context of pregnancy, a bulky tumor poses additional risks, including vaginal hemorrhage, infection, and obstruction of the birth canal, necessitating a tailored therapeutic strategy [7].

For patients diagnosed with Stage IIA2 disease during the second trimester, the conflict between maternal and fetal outcomes is most acute. Standard treatment for non-pregnant patients, concurrent chemoradiation or radical hysterectomy [8], would result in iatrogenic onset of extremely preterm birth, which is associated with severe neonatal morbidity [9]. To address this, NACT has emerged as an evidence-based strategy to bridge the pregnancy to fetal maturity [10]. Platinum-based regimens, particularly the combination of Paclitaxel and Carboplatin, are preferred due to the placenta's ability to filter these agents and the fetal liver's capacity to metabolize them [11], thereby minimizing teratogenicity when administered after the first trimester [12].

The primary objective of NACT in this setting is twofold: to arrest tumor progression or induce regression to facilitate surgical resection, and to prolong gestation until fetal lung maturity is achieved [13]. Despite the growing body of literature, evidence specifically focusing on the management of bulky Stage IIA2 tumors via NACT remains limited.

In this report, we present a challenging case of Stage IIA2 cervical cancer diagnosed at 25 weeks of gestation. The patient underwent a successful course of taxane-platinum NACT, which stabilized the disease and allowed for a safe cesarean section at term. This case reinforces the feasibility of NACT as a standard of care for locally advanced cervical cancer in pregnancy.

2. Case Presentation

2.1. Patient Information

The patient is a 38-year-old female, G3P2 (two previous vaginal deliveries in 2017 and 2019). She had no history of drug allergies or chronic medical conditions prior to pregnancy.

2.2. Clinical History and Diagnosis

The patient was diagnosed with cervical cancer at 25 weeks of gestation. The initial staging was determined as FIGO Stage IIA2. Following a multidisciplinary consultation, she was treated with NACT using a Paclitaxel and Carboplatin regimen to control tumor progression while allowing the fetus to mature. By the time of admission for delivery, she had completed four cycles of chemotherapy.

2.3. Admission Findings

The patient was admitted to the Department of Obstetrics at 37 weeks and 1 day of gestation.

Vitals: The patient exhibited tachycardia with a pulse of 121 bpm; Blood pressure was 110/70 mmHg; Temperature was 37°C.

Physical Exam: Fundal height was 30cm, and the fetus was in cephalic presentation.

Obstetric Status: The cervix was closed, and no uterine contractions were noted.

2.4. Diagnostic Assessment Methods

Pelvic MRI revealed a single live fetus in cephalic presentation. Tumor Characteristics: A cervical mass with abnormal signal intensity was identified, measuring 3.1 x 4.1 x 2.8cm (Anteroposterior diameter x Height x Transverse). The mass showed high signal on T2W, low signal on T1W, and restricted diffusion. Local Invasion: The tumor invaded nearly the entire cervical stroma and extended to the anterior wall of the upper 1/3 of the vagina. Negative Findings: There was no parametrial invasion, no serosal breach, and no pelvic lymphadenopathy or free fluid. Conclusion: Findings were consistent with Stage IIA2 cervical cancer.

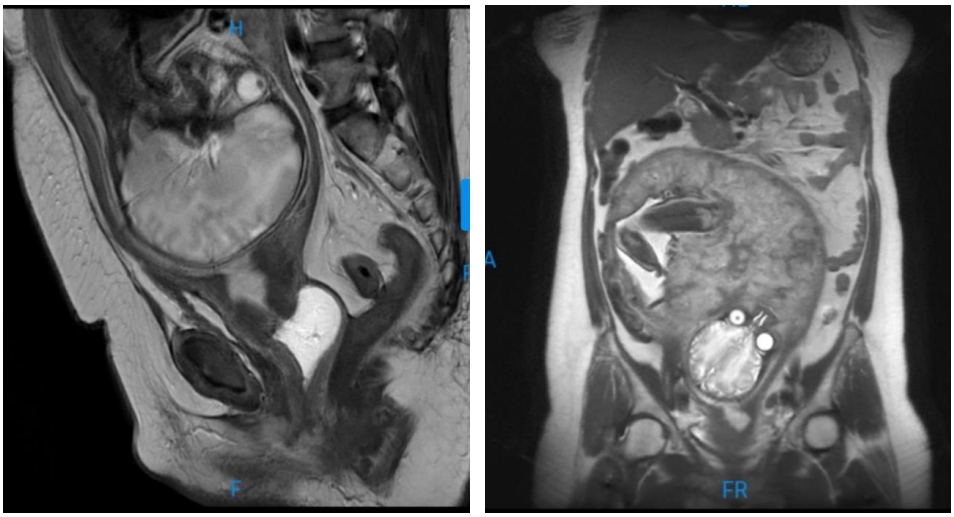

Figure 1. Pelvic MRI demonstrating Stage IIA2 cervical cancer.

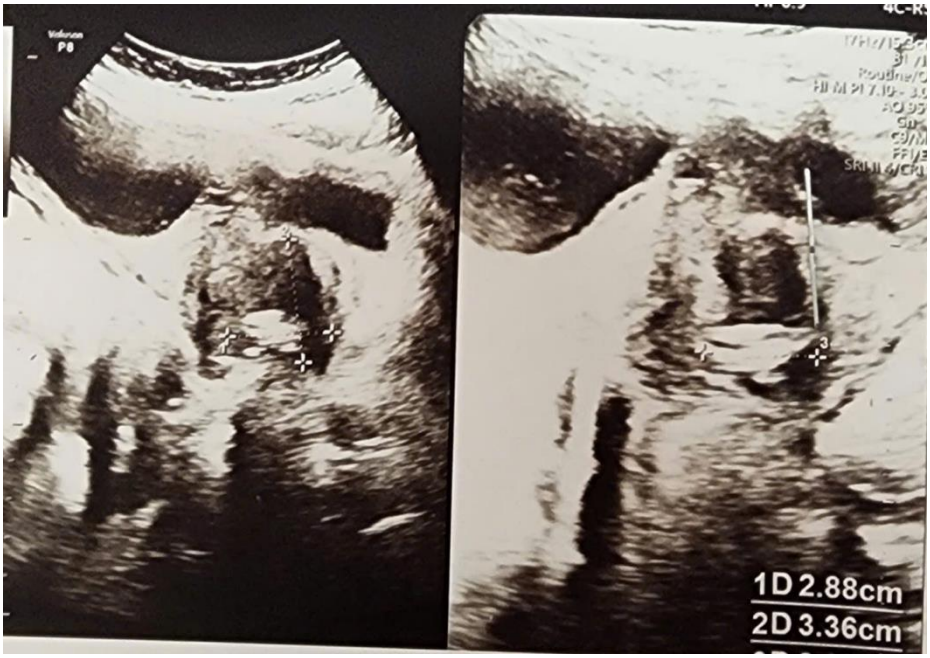

Figure 2. Ultrasound demonstrating Stage IIA2 cervical cancer.

Ultrasound showed an estimated fetal weight (EFW) of 2632g ± 10%. A hypoechoic mass measuring 28 x 33 mm with hypervascularity was visualized at the cervix.

Hematology: Hemoglobin was 97 g/L, indicating moderate anemia. White blood cell count was 7.12 x 10^9L, and Platelets were 178 x 10^9/L. Coagulation profile (PT, INR, APTT) was within normal limits. Biochemistry: Liver enzymes (AST 15.62 U/L, ALT 5.04 U/L) and renal function (Creatinine 90.73 µmol/L, eGFR 64 mL/min) were stable. Preoperative screening for HIV, Hepatitis B, and Syphilis was negative.

2.5. Therapeutic Intervention and Outcome

Given the bulky tumor size (≥ 4cm height on MRI) and the risk of obstruction and hemorrhage, vaginal delivery was contraindicated. An elective Cesarean Section was performed.

Neonatal Outcome: A live male infant was delivered, weighing 2700 grams. The Apgar score was 8 at 1 minute and 9 at 5 minutes.

Maternal Outcome: The surgery was uneventful. The patient was transferred for definitive oncological management post-delivery.

3. Discussion

NACT in pregnancy: This case highlights the efficacy of NACT in preserving pregnancy. Diagnosed at 25 weeks, immediate delivery would have resulted in extreme prematurity.

The use of Paclitaxel-Carboplatin stabilized the disease, preventing progression beyond Stage IIA2 for over 12 weeks.

Radiological staging with MRI: In pregnancy, clinical staging is difficult. The MRI findings were pivotal in this case. The measurement of the tumor height at 4.1cm confirmed the classification of bulky tumor, which differentiates Stage IIA2 from IIA1. MRI accurately mapped the vaginal invasion (upper 1/3) while ruling out parametrial involvement, which is crucial for determining if a radical hysterectomy (Wertheim-Meigs) is feasible post-cesarean.

Timing and mode of delivery: Delivery was timed at 37 weeks, balancing fetal maturity against the risk of maternal disease progression. Cesarean section is the standard of care for Stage IIA2 to avoid tumor trauma, hemorrhage, and potential implantation metastasis at the episiotomy site [14]. The birth weight of 2700g suggests that while there may be some impact from chemotherapy or maternal condition, the fetus reached a healthy weight for gestational age.

4. Conclusion

Managing Stage IIA2 cervical cancer in pregnancy requires a multidisciplinary approach. This case demonstrates that NACT is a safe bridge to fetal maturity for patients diagnosed in the second trimester with bulky tumors. Accurate staging via MRI and timely cesarean section at term resulted in a favorable neonatal outcome.

Abbreviations

MRI	Magnetic Resonance Imaging
NACT	Neoadjuvant Chemotherapy
FIGO	International Federation of Gynecology and Obstetrics

Author Contributions

Tuan Ho: Conceptualization, Resources, Data curation, Methodology, Writing – original draft

Yen Nguyen: Data curation, Methodology, Supervision, Writing – review & editing

Hoai-Thanh Lam: Formal Analysis, Methodology, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

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