Advanced Anal Carcinoma during Pregnancy: A Case Report

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Abstract

Objective To present a rare case of anal squamous cell carcinoma (SCC) in a young pregnant woman.

Material and Methods The information was collected based on the clinical record after obtaining the informed consent of the patient.

Results This is the case of a 34-year-old pregnant woman with stage IIIB anal SCC. She was treated with chemotherapy before delivery, followed by cesarean section and chemoradiotherapy after birth. The patient experienced complete clinical and imaging regression after treatment, but she presented early tumor regrowth requiring abdominoperineal amputation, with negative surgical margins.

Discussion The treatment of anal cancer in pregnant women is based on a multidisciplinary approach, adapting current clinical guidelines. It establishes a challenge from an ethical point of view that must consider the impact on the health of the mother and the fetus. Anal screening in carriers of cervical pathology due to papilloma virus would be a good tool for early detection.

Keywords
- anal cancer
- pregnancy
- squamous cell carcinoma
- cervical dysplasia
- papillomavirus infection

Introduction

Cancer in pregnancy is defined as a malignant neoplasm that is diagnosed during pregnancy and up to 1 year postpartum. It is an infrequent scenario, with the frequency corresponding to 0.1% of pregnancies in the United States. The most frequent cancers in pregnant women are cervical cancer, in the first place, followed by breast cancer, then, with variable frequency, hematological neoplasms, melanoma, thyroid, ovarian, and colorectal.[1,2]

Anal cancer (AC) is very rare in the general population, representing less than 1% and 3% of all new diagnoses of gastrointestinal cancer and tumors, respectively.[3] The incidence is 1.5 times higher in women than in men, and about 54% occur in people over 65 years of age.[4] In Europe, the incidence rate between 25 and 44 years of age is 3.9 per 100,000 per year,[4] while in the United States, it is estimated that 9,760 new cases will arise in 2023.[5] No epidemiological data published in Chile were found. To date, there are no reports of cases of AC in pregnant women published nationally or internationally.

Among the most frequent symptoms of AC, there is bleeding (45%), followed by pain, sensation of rectal mass, ulcer that does not heal, discharge, fistula, and pruritus, which are non-specific symptoms and in 70 to 80% of cases are initially diagnosed as benign conditions.[3,4] Pain on defecation, anal discharge, changes in bowel habits, and incontinence suggest larger and more advanced lesions.[4] Many of these symptoms are present in normal pregnancy, which can make diagnosis difficult.[6]

Its management should be individualized and based on the principles of managing the general population. International guidelines make explicit the need for counseling regarding fertility problems secondary to treatment.[2,3,7] The usual

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management of chemotherapy (QT) and radiotherapy (RT) followed by surgical treatment requires a multidimensional approach according to the type of cancer, tumor stage, and gestational age.[1,3,7] This management achieves a long-term survival of 80 to 90% of patients; however, it cannot be performed during pregnancy since pelvic radiation is contraindicated.[1] The decision of the appropriate moment to start treatment must be informed and agreed upon between the pregnant patient, gynecologists, and oncologists.

It is of special interest to publicize this clinical case as it is an extremely unusual scenario that falls outside the general framework of clinical guidelines. In addition, there are no cases published nationally or internationally.

Clinical Case

We describe the case of a 34-year-old woman undergoing a 24-week pregnancy with a history of uterine cervical pathology associated with human papillomavirus (HPV) that required surgical treatment with a cervical cone in 2022 due to intraepithelial neoplasia (IEN) III.

She presented with an 8-month history of proctalgia, volume increase, intermittent rectal bleeding, and anal discharge. The physical examination revealed the presence of an ulcerated tumor in the anus, 4 cm in diameter, located in the right posterior quadrant, and associated with thickening and pain on mobilization of the anal sphincter. The pathology study reported the presence of well-differentiated squamous cell carcinoma (SCC) with a positive p16 marker.

Human immunodeficiency virus (HIV) was ruled out. Staging was performed with magnetic resonance imaging (MRI) of the abdomen and pelvis and computed tomography (CT) of the chest. Eccentric parietal thickening of the anal canal was identified with compromise of the external and internal sphincters. Extension toward the pectineal line, levator ani muscle, and posterior wall of the lower third of the vagina. No regional adenopathies or distant lesions (►**Fig. 1**).

With a diagnosis of stage IIIB anal SCC (cT4 N0 M0) (AJCC 2018), the case was discussed with a multidisciplinary team made up of a medical oncologist, gynecologists, coloproctologists, and the patient defined treatment with QT to allow disease control while waiting for fetal maturation.

She received 3 cycles of paclitaxel 280 mg ev + carboplatin 800 mg ev. In addition, intravenous betamethasone for fetal lung maturation at the completion of chemotherapy.

During QT, the patient had occasional rectal bleeding, but no adverse hematological effects. Once treatment was completed, she was scheduled for a cesarean section on the 35th week of gestation, giving birth to a healthy newborn (2,170 grams and 42.5 cm).

In the postpartum tumor evaluation, the CT evidenced growth of the anal neoplasia without distant spread, and MRI of the pelvis confirmed slight growth (►**Fig. 1**). In this context, breastfeeding was suspended, and QT (cisplatin 90 mg IV + capecitabine 1150 mg po, 2 cycles) and RT (54 Gy to the primary tumor and 45 Gy to regional lymph nodes) were started.

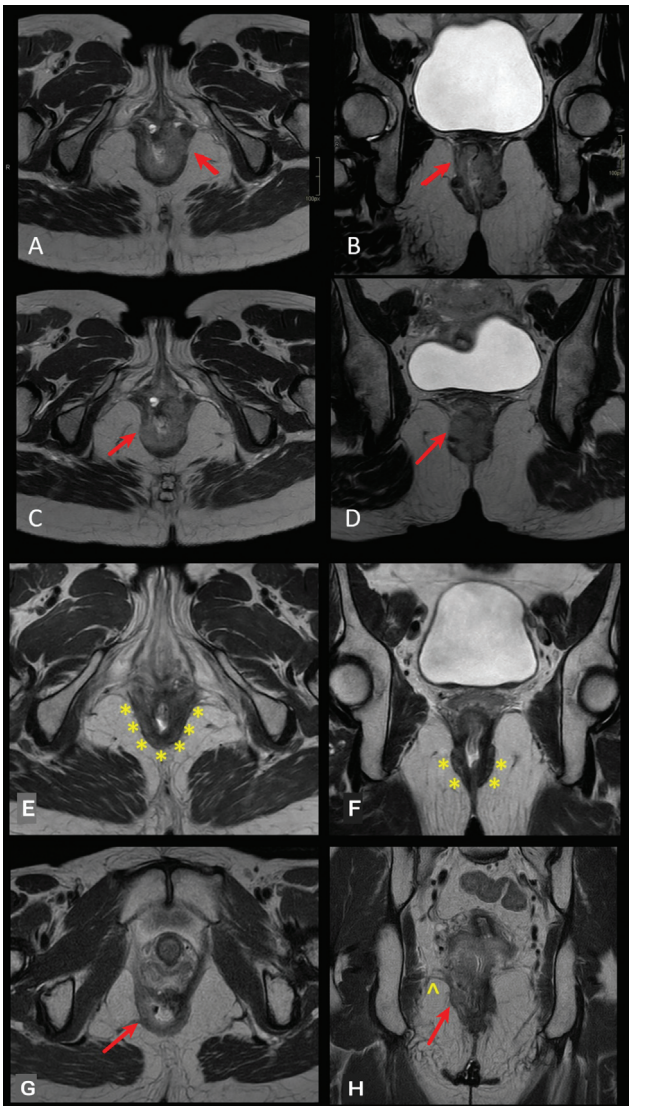

Fig. 1 Evolution of magnetic resonance imaging (MRI) of pelvis in T2-weighted sequence at the time of diagnosis (**A, B**), after cesarean section (**C, D**), and control at 3 (**E, F**) and 5 months (**G,H**) after chemoradiotherapy .Notes: **A**, axial section, tumor involvement of the left internal anal sphincter (IAS) and external anal sphincter (EAS) (**arrow**). **B**, coronal section, tumor involvement of the right IAS and the levator ani muscle (**arrow**). **C** and **D**, axial and coronal sections with tumor progression, greater involvement of the IAS, EAS, and puborectalis muscle (**arrow**). Axial (**E**) and coronal (**F**) sections with absence of foci of tumor thickening of the anal canal (*). **G** and **H**, axial and coronal sections, right posterolateral neoplastic thickening of the upper third of the anal canal (arrow), not visible in previous control (**E, F**) and involvement of the right levator ani muscle (^).

It evolved with persistent actinic proctitis and perineal dermatitis. The patient required hospitalization for management with corticosteroids and topical Vaseline, achieving clinical improvement and adequate pain management with a buprenorphine patch.

At 3 months post RT, the patient had complete clinical and imaging regression (►**Fig. 1**). Subsequently, she evolved with

a reappearance of proctorrhagia, proctalgia, and gas and bowel incontinence. The physical examination revealed a severe anal stenosis that did not allow rectal examination (►**Fig. 2**). A sigmoid loop colostomy was performed, which relieved the symptoms, and a new biopsy sample was taken to confirm tumor regrowth.

The patient completed 5 cycles of nivolumab, and an abdominoperineal amputation was performed. The abdominal approach was laparoscopic, and the perineal approach was in forced lithotomy, with the "extralevator" technique. Due to compromise of the posterior wall of the vagina, she required partial resection of it (►**Fig. 3**). Bio-A mesh was installed on the pelvic floor, and perineorrhaphy was performed in three planes, leaving Blake drains through the abdominal and perineal routes. The patient evolved favorably, being discharged on the 3rd day with a perineal drain that was removed after a week. The pathology report confirmed the presence of poorly differentiated SCC, stage IIIB (pT4N0), with negative surgical margins.

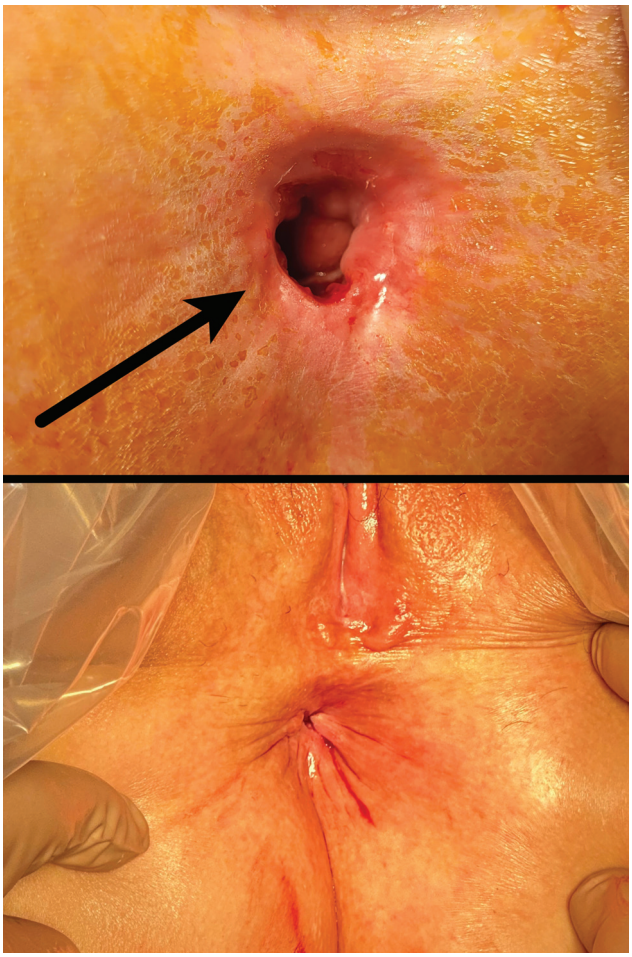

Fig. 2 Above: severe actinic stenosis of the anal canal. Biopsies of tumor regrowth taken from the anal canal in the right posterior quadrant (**arrow**). Below: evolution of anal stenosis due to tumor regrowth 6 months after chemoradiotherapy.

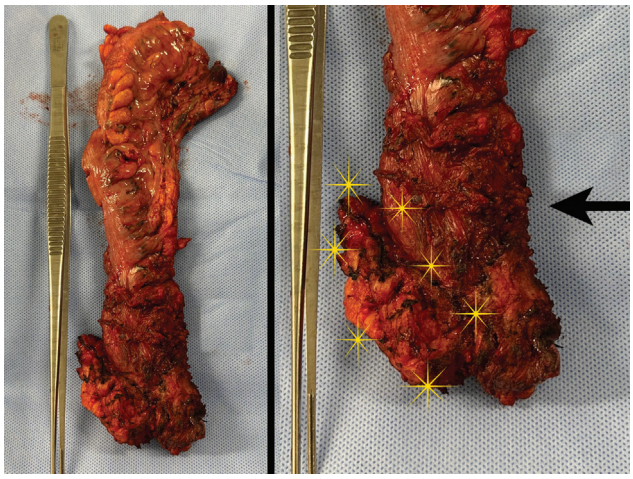

Fig. 3 Surgical piece for extralevator abdominoperineal resection. Height of the levator ani muscle (**black arrow**), tumor extension to the right and anterior with vaginal compromise (**asterisks**), with intact cylindrical mesorectum.

Discussion

Malignant pathology in pregnant women is a rare entity.[2] Regarding anal SCC and its synchrony with pregnancy, there are no cases published in the international literature to date. The tumors do not have repercussions on pregnancy, the rate of abortions or premature births is the same of a pregnancy without cancer. The presence of fetal involvement has been described in cases of synchronous melanoma.[1] Anal SCC frequently presents with proctorrhagia (45%), proctalgia (30%), and sensation of perianal mass (30%), symptoms compatible with what the described patient presented.[3,4]

A risk factor associated with this neoplasia is the presence of cervical pathology associated with HPV, as in the case presented. There is convincing evidence showing the relationship between HPV 16 and 18 infection and the development of anal SCC.[4,6] Other known risk factors are anal intercourse, the presence of HIV, smoking, and other sexually transmitted infections.[6] The patient did not present immunization against HPV.

For decades, the most effective treatment has been chemoradiotherapy for both localized stages (T1–2N0) and locally advanced disease (T3–4 and/or N+), with good long-term results.[3,6,8,9] For T2-to-3 N0 patients, the overall 5-year survival reaches 82%, while disease-free survival reaches 72%. T4-N0 patients at 5 years have somewhat lower overall and disease-free survival (57% and 50%, respectively).[4,9] Recurrences vary between 20 and 44% at 5 years of follow-up and are especially frequent in the advanced cancer group.[8]

In this case, the diagnosis was made of an advanced disease with involvement of the sphincter complex, pelvic floor, and posterior wall of the vagina, with a good response initially, but with early recurrence.

In cases of poor response to chemoradiotherapy or recurrence, the treatment of choice is surgical resection. In this case, a laparoscopic abdominoperineal resection was performed with wide resection of the pelvic floor, which

was reinforced with a resorbable synthetic mesh (Bio-A) used safely in laparotomy closures by anterior approach,[10] and with partial resection of the posterior wall from the vagina.

Conclusion

Anal cancer concurrent with pregnancy is an extremely rare scenario. The importance of early detection is emphasized in this context, especially in patients with a history of NIE and HPV. Performing anal screening becomes an essential pillar for the early identification of preneoplastic lesions and, therefore, of possible cases of anal SCC.

Pregnancy adds a complex ethical challenge to the equation, requiring the collaboration of a multidisciplinary team for decision-making that considers both the mother's health, her desire for future fertility, and the health of the fetus. The case presented underlines the need to address these situations comprehensively and carefully, showing that the collaboration between oncologists, gynecologists, and coloproctologists is crucial to define an appropriate treatment approach.

Authors' Contributions

DAP, conceptualization, data curation, methodology, project administration, formal analysis, research, visualization, and writing - review and editing; JAP, conceptualization, data curation, project administration, research, visualization, and writing - review and editing; ARV, conceptualization, validation, supervision, research, and resources; GCV, conceptualization, validation, methodology, supervision, research, resources, visualization, writing - review and editing.

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Conflict of Interests

The authors have no conflict of interests to declare.

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