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Case Report

Anal canal adenocarcinoma due to human papillomavirus: unusual report of a case

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ABSTRACT

Anal adenocarcinoma (AC) is a rare malignancy, accounting for only 5% of anal cancers, and presents significant diagnostic and therapeutic challenges due to its low incidence and limited data. The most common type of anal cancer is squamous cell carcinoma (SCC), commonly associated with human papillomavirus (HPV) infection. However, AC, particularly transitional type, has distinct clinical and biological profile. This case report discusses 66-year-old female with anal canal transitional adenocarcinoma associated with HPV, presenting with 2 cm tumor at anal verge. Diagnosis was confirmed through biopsy and imaging studies revealed no lymph node involvement. Patient underwent successful transanal resection with clear margins and post-op recovery was uneventful. Follow-up included regular clinical and imaging evaluations, with no signs of recurrence after 2 years. Treatment options for anal AC include local resection for small, well-differentiated tumors, and chemoradiotherapy for select cases. Prognostic factors such as age, tumor size and nodal involvement significantly influence survival outcomes. Continued research and case studies are necessary to refine treatment approaches and improve long-term patient care for AC.

Keywords: Anal canal adenocarcinoma, Human papillomavirus, Transicional adenocarcinoma, Anal canal cancer

INTRODUCTION

Anal canal cancers are defined as tumors with their epicenters located between the anal verge and up to 2 cm above the dentate line. It can be histologically divided into three parts: the external zone lined by a squamous epithelium, the transitional zone covered by an "urothelium-like" epithelium, and the colorectal zone. The most frequent type of anal carcioma is squamous cell carcinoma (SCC), accounting for approximately 90% of cases. This type is commonly associated with HPV infection, although non-HPV-related cases can also occur.[1] Anal adenocarcinoma (AC), on the other hand, is a rare entity, with a low incidence of about 5%. Although the link between HPV infection and SCC is well-documented in the literature, the association between HPV infection and anorectal AC has been explored in only a limited number of studies and reports.[2,3] This is likely due to the low overall incidence. Various forms of clinical presentation are observed, ranging from localized symptoms such as bleeding, pain, fistula or the presence of a palpable mass, to systemic signs in more advanced stages of the disease.[4]

Standard diagnosis includes a biopsy and imaging, typically MRI or CT, for staging and to determine the extent of the disease. The staging system for anal AC often follows the TNM (tumor, node, metastasis) criteria used for squamous cell anal cancers.[5] Following staging, therapeutic options are based on rectal adenocarcinoma guidelines and may include chemoradiotherapy, local excision, or radical surgery.

A small number of reports for AC has been reported in the literature, with an even lower proportion associated with HPV.[6,7] This is what motives the presentation of this case.

CASE REPORT

A 66-year-old female who came to the office with a 2 cm irregular anal tumor characterized by central ulceration, raised edges on the anal verge with retraction towards the anal canal. The lesion had been present for three months and was asymptomatic during this period of time (Figure 1).

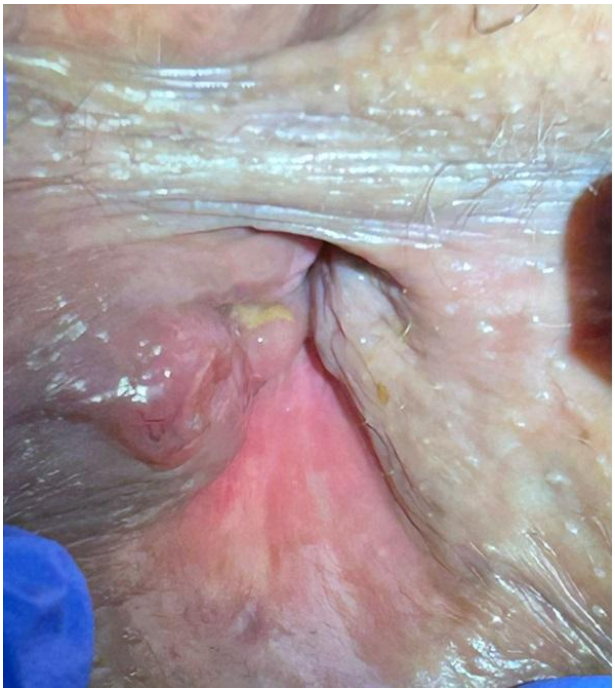

Figure 1: 1-2 cm tumor on the anal margin with central ulceration and telangiectasias extending toward the anal canal at the 9 o'clock position.

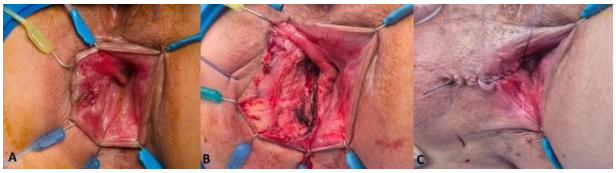

Figure 2: Left-to-right description. (A) Exposure of the anal canal with the Lone Star retractor, revealing the lesion involving the right hemianal region; (B) dissection of the lesion with clear margins, preserving the anal sphincter; (C) primary closure with a 3-0 Vicryl suture.

Clinical evaluation of the inguinal regions revealed no adenopathy. After the biopsy was taken, the histopathology revealed an adenocarcinoma of the anal canal glands/transitional type, P16 positive. There were no findings at the colonoscopy, and the pelvic magnetic resonance imaging revealed a 25 mm lesion, with its bulkiest portion located at the anal verge. The remaining extension toward the pectineal line appeared superficial. There was no evidence of lymph nodes with malignant characteristics, nor lymphovascular or extramural venous vascular invasion. The patient was staged as T2N0M0 according to the NCCN anal cancer guidelines. Carcinoembryonic antigen was normal. After a multidisciplinary team discussion an initial surgical resection was decided. A transanal resection of the entire lesion with clear margins was performed, preserving the sphincter, which did not appear to be compromised, and a primary closure was achieved (Figure 2).

The histopathology reported a well-differentiated tubulopapillary adenocarcinoma (G1) of the anal canal/transitional type, P16 positive, measuring 2×2 cm and invading up to the submucosa. Resection margins were negative, with the distance from the invasive carcinoma to the nearest margin being 0.5 cm. The final Pathological report was pT2Nx (Figure 3).

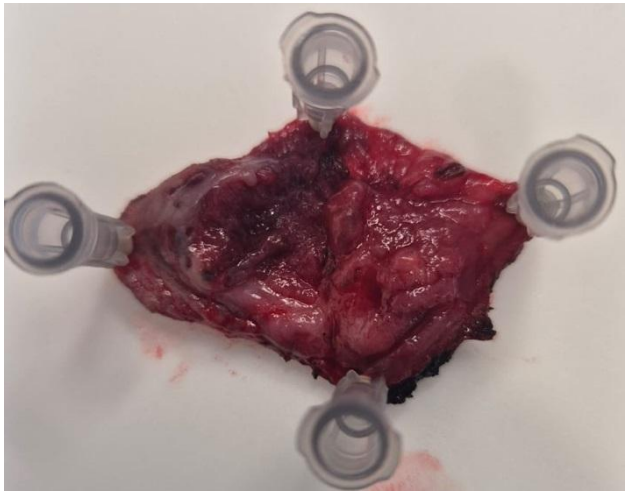

Figure 3: Surgical specimen resection with a 2×2.2 cm ulcerated lesion with clear margins, the closest being 0.5 cm; depth of invasion extends to the submucosa.

Follow-up was conducted rigorously, including a digital rectal examination (DRE), visualization of the anal area, and laboratory tests every three months, as well as imaging studies every six months. No additional treatment was needed and after two years follow-up, there were no evidence of recurrence.

DISCUSSION

AC is an uncommon tumor, significantly less frequent than the SCC. Its rarity, combined with limited available data, has led to an ongoing lack of consensus regarding its optimal treatment and management. This uncertainty is further combined by the variability in patient groups across different studies and the inconsistent findings reported in the literature. Most of the studies found in the literature are case reports, and within systematic reviews, there is variability and a limited number of cases. We present the case of a patient with transitional adenocarcinoma of the anal canal associated with HPV, an even rarer entity with few reported cases.

Among the literature, a variety of treatment options can be found. For instance, according to the NCCN guidelines,

local resection is suitable for the treatment of anal canal AC tumors, which are small in diameter (<2 cm), well-differentiated, and below the dentate line.[8] For patients who are not suitable for local resection (e.g., the sphincter is highly invaded), abdominal perineal resection (APR) is suggested. Unlike SCC, AC of the anal canal was not initially recognized as a candidate for chemoradiation as a primary treatment option due to its distinct biological behavior, which led to a greater emphasis on surgical resection as the main approach. In recent years, however, the approach to managing early-stage anal canal AC has evolved. Chemoradiotherapy (CRT) has emerged as a treatment option, particularly for organ preservation in select cases of early-stage rectal AC (T1 tumors less than 3 cm in diameter, well/moderately differentiated, without lymph node involvement, i. e, N0).[9] This approach allows for potential sphincter preservation, improving the quality of life for patients who meet these criteria. Based on the current evidence collected from the studies included in the review by Taliadoros et al it is recommended that the trimodality treatment approach is followed. Basically, consist on combination of CRT followed by APR, achieving better survival outcomes.[10] Age at diagnosis, nodal status and tumour size significantly impact the outcome of patients treated for AC. Findings demonstrated that patient age (>65) and T3-T4 were independent predictors for decreased overall survival.[11,12]

Follow-up for anal AC cancer aligns with NCCN recommendations for rectal cancer.[8] Clinical evaluations, including DRE and CEA testing every 3-6 months for the first two years, and imaging with CT scans of the chest, abdomen, and pelvis every 6-12 months for up to five years. Colonoscopy is recommended one year after surgery, with subsequent surveillance every 3-5 years. For AC, disease-free survival depends on factors such as tumor stage and treatment approach. Patients treated with early-stage chemoradiotherapy or surgical resection have improved outcomes, with rigorous follow-up needed to monitor recurrence and optimize long-term survival.

CONCLUSION

AC is a rare malignancy that poses challenges in diagnosis and treatment due to its low incidence and limited data available in the literature. The approach to managing this condition has evolved over time, with an increasing role for chemoradiotherapy in early-stage tumors, aiming for sphincter preservation and organ preservation. Surgical resection remains the cornerstone for localized tumors, particularly in cases where the lesion is well-differentiated and small. Prognostic factors such as tumor size, age at diagnosis, and nodal involvement play crucial roles in determining patient outcomes, with older age and advanced-stage disease associated with poorer survival. Rigorous follow-up is essential to monitor recurrence, ensuring the best possible long-term survival for patients. Continued research and more case studies are needed to further refine treatment strategies and improve patient care.

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