

# Concomitant anal and rectal squamous cell carcinoma: A case report

Ritvik Sehdev, Preya Rana, Tahir Shaikh

## ABSTRACT

**Introduction:** Synchronous squamous neoplasms of the anal canal and rectum are exceedingly rare and pose significant diagnostic and therapeutic challenges. The presence of squamous pathology in the anorectal region necessitates careful evaluation to distinguish between primary lesions, contiguous spread, and metastatic disease.

**Case Report:** We report a case of human papillomavirus (HPV)-associated squamous cell carcinoma that initially presented as a rectal high-grade squamous intraepithelial lesion (HSIL). Magnetic resonance imaging demonstrated a locally advanced rectal mass with involvement of the mesorectal fascia and regional lymph nodes. Subsequent endoscopic ultrasound (EUS) confirmed the extent of rectal disease and additionally identified a previously unrecognized, spatially distinct lesion in the anal canal. Biopsy of the anal lesion revealed HSIL with diffuse p16 positivity, supporting HPV-associated pathology.

**Conclusion:** This case highlights the diagnostic complexity of anorectal squamous lesions and underscores the importance of comprehensive evaluation of both the rectum and anal canal when squamous pathology is identified at either site. Early recognition of synchronous lesions is critical for accurate staging and optimal management.

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## INTRODUCTION

Squamous cell carcinoma (SCC) of the rectum is exceptionally uncommon, accounting for approximately 0.1–0.3% of all rectal malignancies, with adenocarcinoma comprising the vast majority [1, 2]. Synchronous involvement of the rectum and anal canal by SCC is even rarer, with only three cases reported in the literature [3]. In most published reports, rectal adenocarcinoma coexists with anal SCC; true synchronous squamous lesions at both sites are distinctly unusual [3]. We present a case of rectal SCC associated with a non-contiguous, synchronous anal squamous lesion, notable for its atypical endoscopic appearance, diagnostic ambiguity, and shared HPV-associated features.

## CASE REPORT

A 61-year-old man underwent a routine screening colonoscopy, during which three colonic polyps were identified and removed. A stalked, polypoid lesion was noted in the distal rectum at approximately 6 cm from the anal verge. The lesion was not amenable to snare polypectomy, so a biopsy was performed. Microscopic evaluation of the specimen was limited by cautery artifact and showed no definitive evidence of malignancy on cytokeratin and D1 staining. Given the inconclusive

histology, the patient subsequently underwent transanal excision, and the pathologic examination revealed dysplastic squamous mucosa consistent with high-grade squamous intraepithelial lesion (HSIL).

The atypical nature of the lesion warranted further evaluation with pelvic magnetic resonance imaging to estimate the true tumor extent, and imaging revealed a lower rectal mass extending to the mesorectal fascia and involving regional lymph nodes, consistent with locally advanced (N1) disease. Additionally, an endoscopic ultrasound (EUS) was performed to better characterize the lesion and obtain additional tissue.

A non-obstructing, medium-sized mass in the distal rectum, measuring 2 cm in length and diameter and located 1–2 cm proximal to the dentate line, was discovered by EUS. The overlying mucosa appeared erythematous, suggestive of previous surgical scarring (Figure 1A). The intramural rectal lesion involved the submucosa, muscularis propria, and extended into the perirectal fat (Figure 1B). Targeted biopsy of the rectal mass yielded three core samples.

Importantly, during this same EUS session, a separate and previously unrecognized mildly nodular lesion was identified within the anal canal at the dentate line (Figure 1C). This lesion was anatomically distinct from the rectal mass and had not been appreciated on prior colonoscopy or imaging. Biopsies were obtained from this anal lesion for histopathologic evaluation.

Histologic examination of the rectal biopsy demonstrated fragments of squamous cell carcinoma associated with HSIL (Figure 2A). Although definitive stromal invasion was not clearly identified on histology, the radiologic and EUS findings supported clinically significant invasive disease. Immunohistochemical staining with p40 supported squamous differentiation. Biopsy of the anal canal lesion showed HSIL with strong, diffuse block-type p16 positivity, a surrogate marker for HPV infection, suggesting a shared viral etiology between the two lesions (Figure 2B and C).

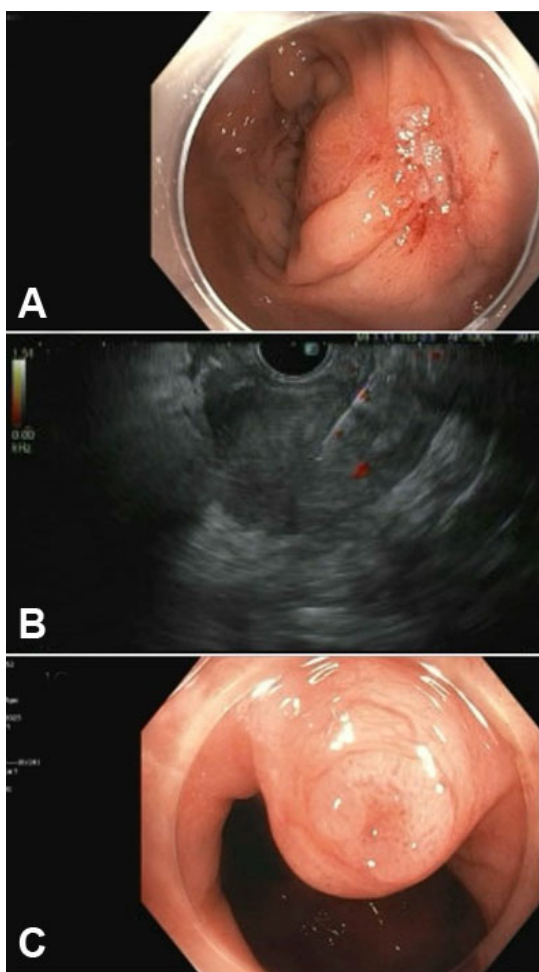


Figure 1: (A) Endoscopic image of the rectal lesion with overlying erythematous mucosa and evidence of scarring. (B) Endoscopic ultrasound image of the rectal lesion showing extension into the mesorectal fascia. (C) Endoscopic image of the nodular anal lesion at the dentate line.

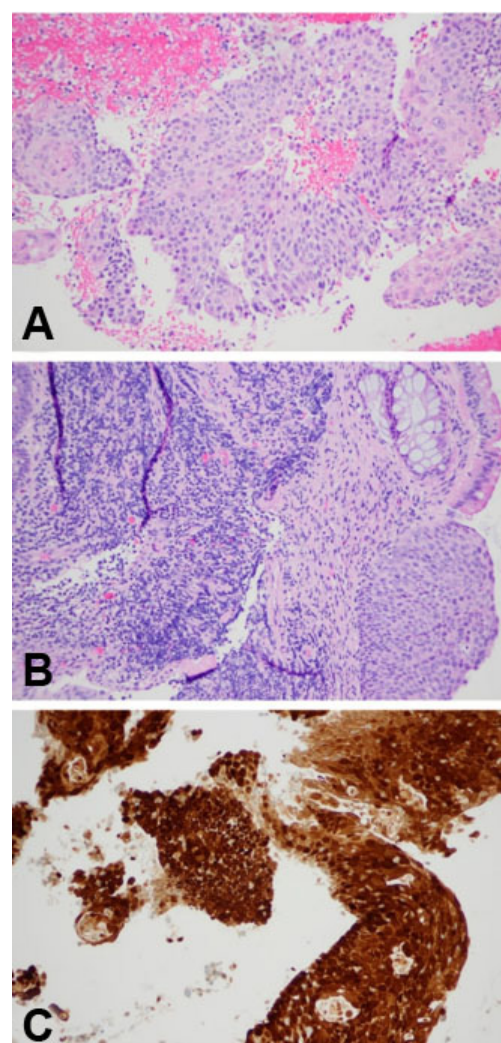


Figure 2: (A) H&E staining (200× magnification) of the rectal specimen showing HSIL. (B) H&E staining (200× magnification) of the anal lesion at the anorectal junction showing HSIL. (C) IHC showing diffuse and strong block-like p16 positivity. H&E: hematoxylin and eosin; HSIL: high-grade squamous intraepithelial lesion; IHC: immunohistochemistry.

## DISCUSSION

Primary rectal squamous cell carcinoma (rSCC) is an exceedingly rare entity, accounting for only 0.1–0.3% of all rectal malignancies [1–5]. This rarity not only limits clinical familiarity but also complicates the diagnostic approach, as distinguishing a primary rectal squamous lesion from proximal extension of anal SCC or metastatic disease can be challenging. To aid in this distinction, Williams and colleagues proposed diagnostic criteria for primary rectal SCC: (i) exclusion of another primary SCC site, (ii) absence of a squamous-lined fistulous tract, (iii) no direct extension from anal carcinoma, and (iv) histopathological confirmation of SCC [6]. In our case, all diagnostic criteria were satisfied; however, a separate anal SCC was identified, clearly delineated from the rectal SCC by intervening normal rectal mucosa.

Several mechanisms have been proposed to explain the pathogenesis of rSCC. Chronic inflammatory conditions, such as ulcerative colitis, along with persistent enteric infections (e.g., amebiasis and schistosomiasis), have been implicated as potential contributors. Viral oncogenesis, particularly involving human papillomavirus (HPV) and human immunodeficiency virus (HIV), is also thought to play a role [7]. Additional risk factors include prior pelvic radiation and smoking-related genetic alterations [8].

One of the leading hypotheses suggests that chronic inflammation may induce squamous metaplasia, which can subsequently undergo malignant transformation [9]. Supporting this theory, squamous differentiation has been identified in colonic lesions. In a series of 750 colorectal adenomas, three cases demonstrated squamous histological features [6]. Similarly, other studies have reported squamous metaplasia arising within adenomatous polyps, including villous adenomas [10–12]. These findings suggest that squamous elements within such lesions may represent a precursor to carcinoma. Furthermore, HPV-associated oncogenesis is increasingly recognized in anogenital malignancies, and the presence of diffuse p16 positivity in both lesions in our case supports a shared etiologic pathway.

Only three reported cases of synchronous rectal and anal SCC exist in the literature [3, 13, 14]. One such case involved a 48-year-old male who underwent chemoradiotherapy (CRT) after an initial surgical approach [13]. The second reported case involved a 78-year-old male [14]. Like in our case, the primary biopsy in this patient did not reveal malignancy. However, since endoscopic and radiological evaluations showed lesions suggestive of neoplastic pathology in both the anus and the rectum, an abdominopelvic resection was done. The diagnosis was confirmed by histopathological analysis, and postoperative chemoradiotherapy was recommended following a multidisciplinary discussion. Like our case, this case highlights the importance of close clinical–radiological

correlation to establish an accurate diagnosis, especially when initial biopsy results are negative or misleading. The third case was of a 68-year-old woman who had HPV-positive SCC in the rectum and the anorectal junction [3]. Similar to our case, endoscopy in this patient showed a lesion in the colon that was much larger than the lesion at the anorectal junction. Microscopic examination of both biopsies confirmed invasive SCC. She received the combination of mitomycin C and capecitabine with concurrent radiotherapy (60 Gy). There was a complete response to treatment as follow-up at six months and two years showed no evidence of disease.

Our case is notable for an occult anal lesion that was identified only on careful inspection during EUS performed for staging of the rectal mass. The presence of the anal lesion raises the possibility of an anal primary with proximal spread. However, anatomically distinct lesions, along with shared HPV positivity, also support the consideration of synchronous primary tumors. Nahas et al. [15] found that cytokeratin CAM5.2 is expressed in rectal SCC and rectal adenocarcinoma but not in anal margin SCC, indicating a possible common cellular origin for rectal tumors. Unfortunately, this distinction could not be examined in our case, as CAM5.2 staining was not performed.

Optimal treatment guidelines for rSCC currently do not exist. Surgery as the first-line therapy is not preferred anymore because of the significant morbidity associated with it [1, 16]. Most centers have shifted to chemoradiotherapy regimens similar to those used for anal SCC, typically involving 50–54 Gy of radiation delivered with concurrent 5-fluorouracil and mitomycin or cisplatin-based chemotherapy [1]. A French retrospective study of 23 patients with rectal SCC reported an 83% complete response rate to chemoradiation, with five-year disease-free survival at 81%, overall survival at 86%, and colostomy-free survival at 65% [17]. Additionally, induction chemotherapy with docetaxel, cisplatin, and 5-fluorouracil (mDCF) has shown promising results in HPV-positive, locally advanced, or metastatic rSCC. In a small cohort, 78% of patients were alive and disease-free at a median follow-up of 33 months, with further improvement observed following subsequent CRT [18]. These outcomes suggest that rectal SCC should be managed using CRT for localized disease and platinum-based regimens for metastatic disease [9]. Similar to anal canal SCC, response to chemoradiotherapy (CRT) is typically assessed at 8–10 weeks using a combination of clinical evaluation, biopsy, and imaging modalities such as pelvic magnetic resonance imaging (MRI) or positron emission tomography-computed tomography (PET-CT). In cases of disease progression, salvage surgery is recommended. However, for patients with stable disease or a partial response, reassessment at six months is preferred over early salvage surgery [7].

## CONCLUSION

This case illustrates the diagnostic challenges posed by synchronous squamous lesions of the rectum and anal canal. Meticulous inspection of the anal canal is essential when squamous pathology is identified in the anorectal region, as early recognition of distinct lesions has important implications for staging, diagnosis, and management. Additionally, histopathology should be correlated with radiologic and endoscopic findings, particularly when it demonstrates in situ disease despite imaging-based evidence of advanced local involvement.

## REFERENCES

1. Astaras C, Bornand A, Koessler T. Squamous rectal carcinoma: A rare malignancy, literature review and management recommendations. *ESMO Open* 2021;6(4):100180.
2. Dyson T, Draganov PV. Squamous cell cancer of the rectum. *World J Gastroenterol* 2009;15(35):4380–6.
3. Ciardiello D, Del Tufo S, Parente P, Gravina AG, Selvaggi F, Panarese I, et al. Case report of unusual synchronous anal and rectal squamous cell carcinoma: Clinical and therapeutic lesson. *Front Oncol* 2023;13:1187623.
4. Kang H, O'Connell JB, Leonardi MJ, Maggard MA, McGory ML, Ko CY. Rare tumors of the colon and rectum: A national review. *Int J Colorectal Dis* 2007;22(2):183–9.
5. Kulaylat AS, Hollenbeak CS, Stewart DB Sr. Squamous cancers of the rectum demonstrate poorer survival and increased need for salvage surgery compared with squamous cancers of the anus. *Dis Colon Rectum* 2017;60(9):922–7.
6. Williams GT, Blackshaw AJ, Morson BC. Squamous carcinoma of the colorectum and its genesis. *J Pathol* 1979;129(3):139–47.
7. Guerra GR, Kong CH, Warriar SK, Lynch AC, Heriot AG, Ngan SY. Primary squamous cell carcinoma of the rectum: An update and implications for treatment. *World J Gastrointest Surg* 2016;8(3):252–65.
8. Ozuner G, Aytac E, Gorgun E, Bennett A. Colorectal squamous cell carcinoma: A rare tumor with poor prognosis. *Int J Colorectal Dis* 2015;30(1):127–30.
9. LeBlanc LJ, Buie LA, Dockerty MB. Squamous-cell epithelioma of the rectum. *Ann Surg* 1950;131(3):392–9.
10. Lundquest DE, Marcus JN, Thorson AG, Massop D. Primary squamous cell carcinoma of the colon arising in a villous adenoma. *Hum Pathol* 1988;19(3):362–4.
11. Chen KT. Colonic adenomatous polyp with focal squamous metaplasia. *Hum Pathol* 1981;12(9):848–9.
12. Almagro UA, Pintar K, Zellmer RB. Squamous metaplasia in colorectal polyps. *Cancer* 1984;53(12):2679–82.
13. Madhu YC. Synchronous squamous cell carcinoma of the anorectum and proctosigmoid—A case report. *Indian J Surg* 2018;80(1):77–80.
14. Jabbar SA, Selvakumar B, Soni SC, Taywade S, Elhence P. Synchronous squamous cell carcinoma of

rectum and anal canal detected by FDG PET/CT-A rare entity. *Clin Nucl Med* 2023;48(6):e297–9.

15. Nahas CSR, Shia J, Joseph R, Schrag D, Minsky BD, Weiser MR, et al. Squamous-cell carcinoma of the rectum: A rare but curable tumor. *Dis Colon Rectum* 2007;50(9):1393–400.
16. Song EJ, Jacobs CD, Palta M, Willett CG, Wu Y, Czito BG. Evaluating treatment protocols for rectal squamous cell carcinomas: The Duke experience and literature. *J Gastrointest Oncol* 2020;11(2):242–9.
17. Loganadane G, Servagi-Vernat S, Schernberg A, Schlienger M, Touboul E, Bosset JF, et al. Chemoradiation in rectal squamous cell carcinoma: Bi-institutional case series. *Eur J Cancer* 2016;58:83–9.
18. Hervé L, Kim S, Boustani J, Klajer E, Pernot M, Nguyen T, et al. Modified DCF (Docetaxel, Cisplatin and 5-fluorouracil) chemotherapy is effective for the treatment of advanced rectal squamous cell carcinoma. *Front Oncol* 2022;12:974108.

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Artificial intelligence (AI) use in the article:

The authors disclose the use of generative artificial intelligence technology (ChatGPT, GPT-5.2 model, OpenAI; <https://www.openai.com>) solely for language refinement and editorial assistance in the Case Report, Discussion, and Conclusion sections of the manuscript. The AI tool was used to improve the clarity and readability of the text. No content was generated autonomously, and all clinical information, interpretations, and conclusions were written, reviewed, and approved by the authors, who take full responsibility for the manuscript.

## Author Contributions

Ritvik Sehdev – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Preya Rana – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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**Conflict of Interest**

Authors declare no conflict of interest.

**Data Availability**

All relevant data are within the paper and its Supporting Information files.

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