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CASE REPORT

Rectosigmoid Squamous Cell Carcinoma: A Rare Case Report

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ABSTRACT

Colorectal cancers (CRC) are predominantly adenocarcinomas, accounting for the majority of cases. Rarer variants include neuroendocrine carcinoma, squamous cell carcinoma, adenosquamous carcinoma, spindle cell carcinoma, and undifferentiated carcinomas. Rectosigmoid squamous cell carcinoma is an exceedingly rare diagnosis, with only 150 cases reported in medical literature. We present a case of rectosigmoid squamous cell carcinoma (SCC) in a 50-year-old female who presented in the emergency department with left lower abdominal pain, fever, non-passage of stools, and flatus for two days. The diagnosis was challenging due to its unusual location and atypical presentation. The patient underwent rectosigmoidectomy, and the specimen was sent for histopathological examination. After a thorough gross and microscopic examination, the diagnosis of moderately differentiated squamous cell carcinoma of the rectosigmoid colon was made. This case highlights the importance of considering rarer malignancies in the differential diagnosis of colorectal malignancies. A thorough gross and microscopic examination is needed to diagnose rarer malignancies of the colorectal region. A multidisciplinary approach is required for accurate diagnosis and treatment.

KEYWORDS

• Colorectal cancers • Adenocarcinomas • Rectosigmoid • Squamous cell carcinoma

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INTRODUCTION

Colorectal adenocarcinoma is the most common type of malignancy in the colorectal region[1]. Squamous cell carcinoma (SCC) of the rectosigmoid region is rare, comprising less than 1% of all CRC cases[2]. Other rare malignancies include neuroendocrine, spindle cell, and adenosquamous carcinoma[3]. Due to its scarcity, more data on its etiology, clinical presentation, and management strategies must be collected. The overall prognosis remains poor, and a comprehensive treatment consensus is absent due to the rarity of the disease[4]. In this context, we report a case of rectosigmoid SCC following rectosigmoidectomy to contribute to understanding this rare malignancy.

Case presentation:

A 50-year-old female patient with no known chronic illness presented in the emergency department with left lower abdominal pain, fever, non-passage of stools, and flatus for 2 days. Physical examination revealed tenderness in the left lower quadrant. A computed tomography scan of the abdomen showed an asymmetric and short-segment colonic wall thickening and an enhancing soft-tissue mass centered in the colon, narrowing the colonic lumen. Urgent rectosigmoidectomy was performed, and the specimen was sent for histopathological examination. On gross examination, a polypoidal growth measuring 6x3x3cm was identified in the rectosigmoid region, which was narrowing the lumen (*Figure 1*). On the cut section, necrosis and hemorrhagic areas were noted.

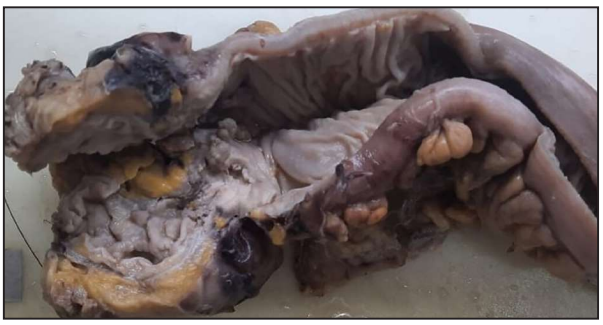

Figure 1: A polypoidal growth measuring 6x3x3 cm in the rectosigmoid region, narrowing the lumen

Microscopic examination revealed nests and sheets of atypical squamous cells having enlarged, hyperchromatic, and pleomorphic nuclei with increased nucleocytoplasmic ratio, prominent nucleoli, and eosinophilic cytoplasm. Evidence of intracellular keratinization and keratin pearl formation is seen along with necrosis and desmoplastic reaction. Tumour was invading the muscularis propria (Figure 2, 3). There was no lymphovascular invasion or perineural invasion, and surgical resection margins were free of tumors. Ten lymph nodes from the surrounding mesentery were resected and examined microscopically. All lymph nodes were free of tumor.

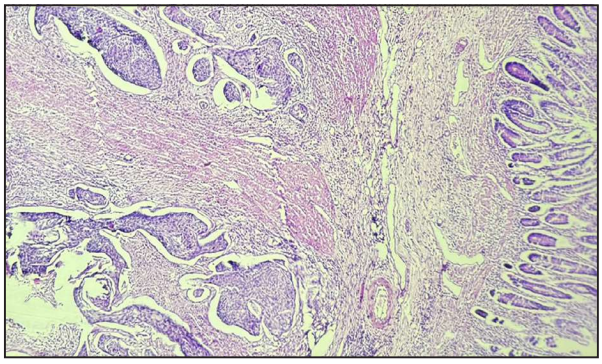

Figure 2: Nests and sheets of atypical squamous cells present in the wall of the intestine (4x)

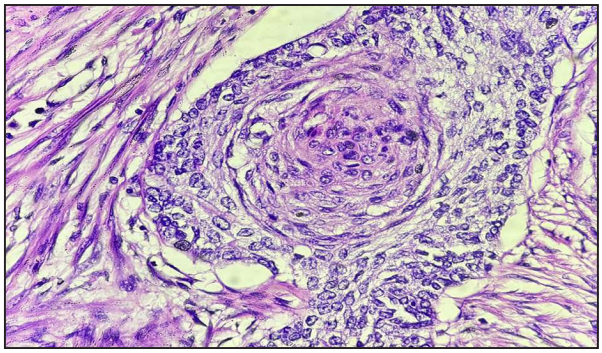

Figure 3: Keratin pearl formation and desmoplastic reaction (40X)

Finally, a diagnosis of moderately differentiated squamous cell carcinoma of the rectosigmoid colon with pathologic stage $pT_2N_0M_0$ was made. The patient died after one week due to multiorgan failure during follow-up.

DISCUSSION

Rectosigmoid squamous cell carcinoma is an exceedingly rare malignancy[1]. It appears to be associated with chronic inflammatory conditions and infections. The apparent association seen between Human Papilloma Virus. The earliest report of colonic SCC found in the literature goes back to 1919 when pseudo-diphtheritic inflammation was described as a local form of Schistosoma mansoni impaction[2]. Usually, people over 50 years of age develop

this type of disease, and studies show the mean age is 56.9 ± 12.19 years.[3] Although there are reports of rectal SCC in patients under 40 years old, colonic SCC in this age group that has not yet been seen in any cases like ours makes it likely to be the first of its kind[4].

The exact causes of squamous cell carcinoma of the colorectal region are still unknown. Several theories have been proposed. One theory is that undifferentiated stem cells in the colon's lining could become squamous cells, developing into cancerous lesions[5]. Another theory is that basal cells of the colon, which are injured accordingly, could become squamous cells[7]. Chronic inflammation, infection, and exposure to asbestos and radiation can lead to damage severe enough for these transformations to happen.[6,8,9] Since it influences cellular growth, the possibility that Human Papillomavirus (HPV) might be involved in developing colorectal SCC is still to be discussed. However, it is not definitively established yet[10]. In our case, there were no obvious causes, such as inflammatory diseases, HPV infection, or familial cancer history, to account for the cancer's development.

The presentation is nonspecific, and patients tend to present with advanced-stage disease. The majority of cases reported were in Grade II[13]. Proctoscopy or colonoscopy with forceps biopsies of visible abnormalities are the primary modalities for definitive rectal squamous cell carcinoma diagnosis. Trans-rectal endoscopic ultrasound (R-EUS) has become an integral part of the staging process of rectal cancer of all types.

Immunohistochemistry is critical in diagnosing primary colorectal SCC and distinguishing it from SCCs originating from other sites[5]. CAM 5.2, AE1/AE3, and 34B12 are the most useful cytokeratins. CAM 5.2 helps to differentiate rectal from anal lesions. It characteristically stains rectal squamous cell and adenocarcinoma but not anal squamous cell lesions. It also provides valuable prognostic information by detecting specific biomarkers[11].

The prognosis for colorectal SCC tends to be unfavorable. Research has shown a 5-year survival rate of 50% for Duke B carcinomas, 33% for Duke C, and 0% for Duke D carcinomas[12]. Another analysis reported a 1-year survival rate of 81.2% and a 5-year rate of 49.5%[4].

The primary treatment for colon SCC is surgical removal of the tumor, if feasible.[5,12] The effectiveness of a chemotherapy regimen, either in conjunction with surgery or as the primary treatment for metastatic disease, is still being evaluated. Protocols similar to those used for anal SCC, including 5-fluorouracil with mitomycin-C or cisplatin, have shown promise.[5] The application of radiotherapy in treating colon SCC remains uncertain, though some advocate for its use alongside chemotherapy for rectal SCC. Considering the responsiveness of colon cancers with microsatellite instability (MSI) to immunotherapy[12].

CONCLUSIONS

Rectosigmoid squamous cell carcinoma is a rare variant of colorectal cancer, presenting diagnostic and therapeutic challenges. Clinicians should maintain a high index of suspicion for unusual colorectal tumors, especially in atypical clinical scenarios. Collaborative efforts among multidisciplinary teams are crucial for individualized treatment planning and optimal patient outcomes. Further studies are warranted to elucidate this rare malignancy's pathogenesis and optimal management strategies.

Conflict of Interest: Nil

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