

# Signet Ring Cell Carcinoma

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## Abstract

Signet ring cell carcinoma is very rare carcinoma of colon and aggressive subtype of colorectal carcinoma that is mostly diagnosed in advanced stage. 5-year survival rate is very poor as compared to other adenocarcinoma of the colon. First case reported in 1951 but clinical literature on this subtype of adenocarcinoma is very limited. In this report a 32-year old male presented with SRCC of colon. Our literature review describes the many factors that contribute to the poor outcome and high recurrence in SRCC of the colon. This study proves that survival rate is increased by early diagnosis and surgical resection. However, the rarity of this cancer and its propensity for insidious onset and aggressive course prove a challenge to the development of such guidelines.

**Keywords:** Colorectal carcinoma, Signet ring cell carcinoma, Proctoscopy, Poor prognosis.

## Introduction

Colorectal cancer (CRC) is third largest cause of cancer in men and second most common cause of cancer in women<sup>1</sup>. In young adults CRC is mostly found in the left side<sup>2</sup>. Some studies prove that CRC in young age have more dangerous histological features, like perineural and vascular invasion and positive margins after resection<sup>3</sup>, inflammatory bowel disease association and positive family history<sup>4</sup>. SRCC is very uncommon type of CRC and occurs less than 1% of CRC cases<sup>5</sup>. It is poorly differentiated adenocarcinoma and shows more aggressiveness than other adenocarcinoma of colon because of diagnosis in advanced stage.<sup>6</sup>

SRCC is a type of mucinous carcinoma, which is histologically characterized by cancer cells with increased intracytoplasmic mucin, which pushes nuclei to peripherally and gives them their "signet ring" appearance. SRCCs mainly arise in stomach, with most occurring in other organs like breasts, gallbladder, urinary bladder, pancreas and colorectum<sup>7</sup>. Colorectal SRCC, is different from other colorectal adenocarcinomas in terms of early onset, higher rate of peritoneal seeding, higher distant metastasis, lower rate of liver metastasis and the poor prognosis<sup>8</sup>. SRCC has higher tendency of spreading in intramucosal with sparing of mucosa. That's why SRCC is rarely detected in some cases in regular biopsies<sup>9,10</sup>.

Here, we describe a case of SRCC of rectum in which definite diagnosis was done by proctoscopic biopsies.

**Case History:** 32-year-old male came with chief complaint of bleeding per rectum while passing stool, since 02 months with history of loss of appetite. He has no positive family history of GIT cancer or any disease. No history of vomiting and weight loss and no association with pain.

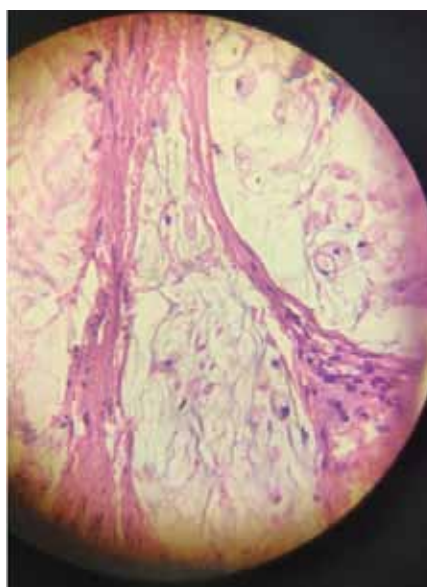
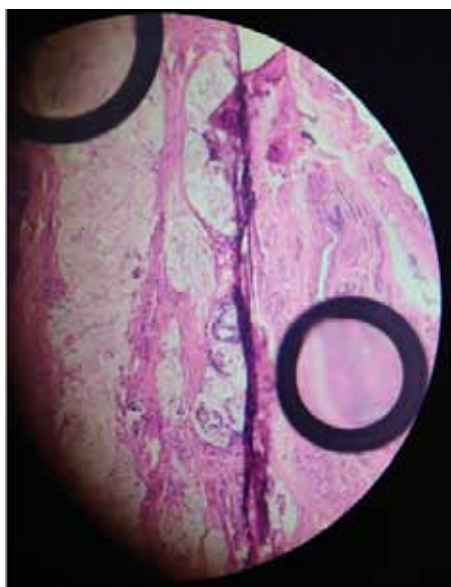
On clinical examination, abdomen was soft and nontender. No clinical finding of external skin tag, fissure, fistula but ulcerative growth present 1 cm from anal verge on per rectal examination.

CECT findings were enhancing soft tissue density, polypoidal mass lesion arising from the posterior right lateral wall of the anorectal region suggestive of rectal carcinoma with lymphadenopathy.

Proctoscopy was performed and biopsy was submitted for histological examination.

**Gross Examination:** Multiple, irregular, whitish brown fibrofatty tissue piece aggregating 1 x 1 cm.

**Microscopic Examination:** Low power view showing mucin lake containing signet cells of adenocarcinoma. High power view showing signet cell in mucin background.



### Discussion

According to various study more than 96% cases are found in stomach. SRCC is very uncommon type of colorectal carcinoma, which is 0.1%–2.6% of all colorectal cancer carcinoma<sup>8</sup> and have poor outcome, compared to other adenocarcinomas because it have high tendency of diffusion in intramural, lymph node, peritoneal and distant metastasis<sup>11</sup>. some study shows that survival rate of SRCC is significantly lower than other adenocarcinomas due to advance stage at time of diagnosis and distant metastasis<sup>6</sup>. In this case patient come with bleeding per rectum while passing stool and loss of appetite. CECT and proctoscopy finding were suggestive of diffuse infiltrative carcinoma of rectum<sup>10,11</sup>. With the help of Proctoscopy, sufficient specimens was taken from deeper tissue and confirmed diagnosis was found.

Rectum is most commonly involve, with a incidence of 32.4% to 46.8% bone metastasis from colorectal cancers<sup>13,14,15</sup>. Considering that patient had no lung or liver metastasis. In summary, SRCC diagnosed by proctoscopy biopsies and SRCC is a malignancy of glandular lining of gastrointestinal tract with signet rings like appeared cells under microscopy. The signet ring-like appearance of cells due to the abundant mucin within cells, pushing the nuclei to the peripheries. These cells are mostly associated with pools of extracellular mucin.

### Conclusion

SRCC, uncommon histopathologic type of CRC that is more commonly found in younger and has a distinct clinical presentation. SRCC in our study of a patient come with prolonged gastrointestinal symptoms, as SRCC is an aggressive type with poor prognosis when detected in an advanced state. Rule out a primary GI malignancy that has metastasized to other location in the colon is very important.

**Ethical Clearance:** Taken from institutional ethics committee.

**Source of Funding:** Self.

**Conflict of Interest:** Nil.

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