

CASE REPORT

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# Squamous cell carcinoma of rectum presenting in a man: a case report

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## Abstract

**Background:** Primary squamous cell carcinomas of the colorectum are very uncommon. Until now, to the best of our knowledge, only 114 cases of squamous cell carcinoma in the colorectum exist in the reported literature. Here we report a case of squamous cell carcinoma of the rectum in the ethnic Kashmiri population in northern India.

**Case Presentation:** The case of a 60-year-old male patient (Asian) with a pure squamous cell carcinoma of the rectum is presented here. The patient underwent a curative surgery with concomitant chemotherapy. Two years after the initial curative resection of the tumor he is still alive.

**Conclusion:** The prognosis for squamous cell carcinoma of the colorectum is worse than for that of adenocarcinoma, because of the delayed diagnosis. The etiopathogenicity of squamous cell carcinoma of the colorectum is discussed. Surgical resection of the lesion seems to be the treatment of choice. Chemotherapy also helps in improvement of the prognosis.

## Introduction

The occurrence of squamous cell carcinomas (SCC) in the colorectum is a rare entity representing a small fraction of colorectal malignancies, since more than 90% of colorectal diseases are adenocarcinoid tumors [1]. Very little information is available in the literature about the etiology, prognosis and optimal treatment of this malignancy [2]. Here in this study, we describe a patient with SCC of the rectum who underwent a lower anterior resection (LAR) for the possible treatment of the malignancy.

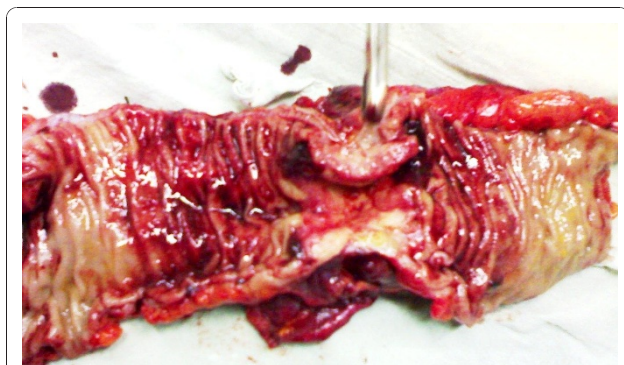
## Case presentation

A 60-year-old male patient from an urban area of Kashmir (Asian) visited the Department of General Medicine of our institute with the chief complaints of severe lower-abdominal pain for the past eight months. The patient also complained of severe constipation, nausea, vomiting, anorexia, loss of appetite, abdominal cramps, incontinence of faeces and weight loss during the past four months. He experienced profuse bleeding from the rectum for the last month. Initial interviews with the

patient revealed that the he was a heavy smoker and frequent user of *noon-chai* (Salt tea), meat and pickles. On examination the patient was found to be anemic. Digital rectal examination revealed an ulcero-infiltrative lesion with restricted mobility about 4 cm from the anal verge on the left lateral wall. A colonoscopy confirmed the rectal examination and biopsies taken at the time of the colonoscopy revealed squamous cell carcinoma (SCC) of basal cell type in the first histopathological examination. The report was re-confirmed by a second independent pathologist. A Contrast-Enhanced Computed Tomography (CECT) of the chest, abdomen and pelvis was also done but no lesions were found in any other site than the rectum. The lesion was without any fat stranding or lymphadenopathy. Furthermore, following the provisional diagnosis, the patient was referred to the Department of General Surgery for radical treatment, where he underwent LAR of the rectum using the standard technique of mesorectal excision (Figure 1). The continuity of the gut was restored by a circular stapler for low colorectal anastomosis with formation of a colonic pouch. The colonic pouch takes over the function of rectal reservoir which is lost after excision of the middle and lower rectum. Microscopic examination of the resected lesion demonstrated a 2.5 cm × 3 cm SCC tumor of the rectum infiltrating the serosa. The margins of the

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**Figure 1** Image showing the inner lining of the colon with a rosette-shaped malignant tumor at the lateral wall of the rectum.

excised tissue were found to be free of the tumor. However, four regional lymph nodes were also infiltrated by the metastatic SCC cells. The liver and the rest of the organs were free of any metastasis. The slides were reviewed by a third histopathologist who reported the lesion as poorly differentiated squamous cell carcinoma. The stage of the tumor was found to be T<sub>3</sub>N<sub>2</sub>M<sub>0</sub>. The post-operative period was uneventful. Post-operatively the patient received four cycles of chemotherapy with cisplatin and 5-fluorouracil for five days. The patient is on two years of follow-up and has not shown any evidence of recurrence as of the present time.

## Discussion

Colorectal cancer (CRC) is the third most common cause of cancer-related death in the world [3]. Almost 90% of CRC are adenocarcinomas, while the remaining 10% are made up of carcinomas, sarcomas and lymphoid tumors [1]. The occurrence of SCC in the gastrointestinal tract (GIT) is a rare phenomenon, and its occurrence in the colorectum is extremely unusual [4]. The incidence of SCC of the colorectum has been reported to be almost 0.1 to 0.25 per 1000 CRC [4,5]. A look into the research work and the reported cases of SCC dates back to 1907, when Herxheimer reported adenosquamous carcinoma of the cecum but it was in 1919 when the first case of pure SCC of the colon was reported by Schmidtman [6] in a 65-year-old man [7]. It was not until 1933 that the first case involving the rectum was subsequently described by Raiford [8]. In India, Bhat *et al.* [9] reported the first case of pure SCC of the colon in 1993 in a 55-year-old female from the southern part of the country. Until now almost 120 cases of SCC have been reported from all over the world (See Table 1). Surprisingly, a study from Russia reported 107 cases of SCC from a single center alone [10] but there has been no such reports of high incidence of SCC in the colorectum from any other part of the world.

Before the diagnosis of primary SCC of colorectum is made, certain criteria must be fulfilled as given by Williams *et al.* in 1979 [11]. This criteria includes: (A) absence of evidence of squamous cell carcinoma of any other part of the body, ruling out any chance of possible metastasis from any organ to the colorectal site; (B) exclusion of any proximal extension of anal squamous cell carcinoma; (C) absence of fistulous tract lined by squamous cells; and (D) confirmation of SCC by histological analysis [1,4,12]. All of these criteria were fulfilled by our case.

A look at the available literature reveals that squamous cell carcinoma of the colorectum affects individuals with a mean age of 55 to 60 years. Women are more frequently predisposed to SCC than men, around 66% of cases occurred in women and 34% in men. Furthermore, SCC occurs in concomitance with an advanced tumor stage (Duke's C) [4,13]. Since SCC of the rectum is a rare tumor, epidemiological data constituting patient demographics, risk factors and natural history are lacking in the literature. The clinical characteristics of the patients with SCC of the colorectum are similar to those with adenocarcinoma: rectal bleeding, abdominal pain, change in bowel habits and weight loss [4]. Because of the rare nature of this malignancy the prognosis for patients is difficult to establish, Comer *et al.* suggested a poorer prognosis for patients with colorectal SCC than adenocarcinoma [1,4,14].

Almost four different pathophysiological theories regarding the origin of squamous cell carcinoma of the colorectum have been proposed in the literature so far. These can be summarized as: (A) Proliferation of uncommitted basal cells into squamous cells which undergo malignant transformation following mucosal injury [15]; (B) Ability of pluripotent stem cells to undergo spontaneous squamous differentiation [16]; (C) Squamous metaplasia of glandular epithelium resulting from chronic inflammation or irritation, secondary to inflammatory bowel disease [17], infection [18] or radiation [19]; (D) Origin from embryonal nests of ectodermal cells; and (E) Arousal of carcinomas from preexisting adenomas or adenocarcinomas [7,20].

## Conclusion

In conclusion, advanced colorectal SCC has a poor prognosis. Since colorectal SCC is a very rare disease, treatment selection is difficult. However, surgical resection and adjuvant chemotherapy [21] is a better approach to the treatment of colorectal SCC.

## Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available with

**Table 1 Reported cases of squamous cell carcinoma of the colorectum (Data available from 1933 to 2009)**

Study number	Study	Age	Sex	Surgery	Outcome
01.	Schmidtman (1919) [6]	65	M	NA	Died after 1 m
02.	Raiford (1933) [8]	43	F	NA	Died after 7 m
03.	Catell <i>et al.</i> (1943) [22]	63	M	LAR	Alive at 3.5 y
04.	Wiener <i>et al.</i> (1962) [23]	52	F	APR	Died at 1 y
05.	Larizaden and Powell (1965) [24]	44	F	APR	Died at 1 y
06.	Cabrera <i>et al.</i> (1967) [25]	62	F	APR	NR
		50	F		NR
07.	Minkowitz <i>et al.</i> (1967) [26]	49	F	Proctocolectomy	Died after 5 m
08.	Gaston <i>et al.</i> (1967) [27]	65	M	Hemicolectomy	Alive at 2 y
09.	Pemberton and Lendrum (1968) [28]	48	F	Hemicolectomy	Alive at 2 y
10.	Birnbaum <i>et al.</i> (1970) [29]	82	M	Hemicolectomy	NR
11.	Corner <i>et al.</i> (1971) [14]	34	F	APR	Alive at 13 y
12.	Lewis <i>et al.</i> (1971) [30]	61	M	Hemicolectomy	Died after 10 d
13.	Balfour (1972) [31]	63	M	NA	Died after 18 m
14.	Horne and McCulloch (1978) [32]	53	M	Hemicolectomy	Died after 11 m
15.	Crissmann (1978) [33]	72	M	Colectomy	Died after 3 d
16.	Burgess <i>et al.</i> (1979) [34]	43	M	Hemicolectomy	Died after 11 m
17.	Williams <i>et al.</i> (1979) [11]	45	M	APR	Died after 9 m
18.	Lasser <i>et al.</i> (1980) [35]	65	F	N/A	Alive at 3 y
		48	F	N/A	Alive 8 m
		54	M	N/A	Alive 17 m
19.	Hickey and Corson (1981) [36]	48	F	Hemicolectomy	Alive at 21 m
20.	Petrelli <i>et al.</i> (1981) [37]	73	M	Colectomy	Died after 9 d
21.	Pitella and Torres (1982) [38]	33	M	Ileocolic bypass	Died after 10 d
22.	Hey and Brandt (1982) [39]	NA	NA	NA	NA
		NA	NA	NA	NA
23.	Lyttle <i>et al.</i> (1983) [40]	65	F	Hemicolectomy	Alive at 2 m
24.	Vezeridis <i>et al.</i> (1983) [41]	56	M	APR	Died after 10 m
		44	M	APR	Died after 9 d
		61	F		Died after 4 m
		66	F		Died after 15 m
		62	F	APR	Died after 13 m
25.	Gould <i>et al.</i> (1983) [42]	61	M	Ileocolic bypass	Died after 3 m
26.	Francioni <i>et al.</i> (1983) [43]	NA	NA	NA	NA
27.	Forouhar <i>et al.</i> (1984) [44]	NA	NA	NA	NA
28.	Lafreniere <i>et al.</i> (1985) [13]	60	M	TAE	Alive at 2 y
29.	Balsano <i>et al.</i> (1985) [45]	65	M	Hemicolectomy	NA
		58	M	Hemicolectomy	NA
30.	Chulia <i>et al.</i> (1986) [46]	NA	NA	NA	NA
31.	Weidner and Zekan, (1986) [47]	73	M	NA	Died after 4 y
32.	Piggott and Williams (1987) [48]	60	F	APR	Alive at 13 m
33.	Woods <i>et al.</i> (1987) [49]	57	F	APR	Died after 3 m
34.	Shao <i>et al.</i> (1987) [50]	NA	NA	NA	NA
35.	Prener <i>et al.</i> (1988) [51]	43	F	APR	Died after 1 y
		77	F	Polypectomy	Died after 3 y
		55	F	APR	Alive at 3 y
		55	M	APR	Died after 3 m
		53	M	APR	Died after 1 y

**Table 1 Reported cases of squamous cell carcinoma of the colorectum (Data available from 1933 to 2009) (Continued)**

36.	Lundquest et al. (1988) [52]	NA	NA	NA	NA
37.	Wyatt (1991) [53]	71	M	NA	Alive at 1 y
38.	Schneider et al. (1992) [54]	44	M		NA
		69	F	TAE	Alive at 3 y
39.	Betancourt et al. (1992) [55]	NA	NA	NA	NA
40.	Vignale et al. (1993) [56]	69	M	NA	NA
41.	Yoshida et al. (1994) [57]	51	M	Hemicolectomy	Died after 39 d
42.	Vraux et al. (1994) [58]	NA	NA	Chemotherapy	Died after 5 y
43.	Alekseev et al. (1994) [59]	NA	NA	NA	NA
44.	Petrelli et al. (1996) [60]	62	M	APR	NA
		41	F	Colectomy	NA
45.	Martinez-Gonzalez et al. (1996) [61]	40	M	LAR	Alive at 18 m
46.	Juturi et al. (1998) [62]	61	F	Hemicolectomy	Alive at 18 y
		61	M	Hemicolectomy	Died after 15 m
47.	Kim et al. (2001) [63]	41	F	LAR	Died after 4 m
48.	Copur et al. (2001) [64]	54	M	APR+CT	NA
49.	Sotlar et al. (2001) [65]	87	M	LAR	Died after 20 m
50.	Frizelle et al. (2001) [66]	9 cases			
51.	Gelas et al. (2002) [2]	47	F	APR+CT	Alive at 16 y
		63	M	APR+CT	Died after 14 m
		70	F	APR	Died after 18 m
		93	M		Died after 4 m
		45	F	LAR	Alive at 6 m
		43	F	LAR	Alive at 2 y
52.	Bhat et al. (2003) [9]	55	F	Hemicolectomy	NA
53.	Kim, 2005 [67]	71	M		NA
54.	Anagnostopoulos et al. (2005) [7]	75	M	APR	Alive at 14 m
55.	Lam et al. (2006) [68]	44	F	LAR	NA
56.	Theodosopoulos et al. (2006) [21]	39	F	APR	Alive at 18 m
57.	Ambrosini-Spaltro et al. (2006) [69]	81	M	Hemicolectomy	Alive at 2 y
58.	Pikarsky et al. (2006) [70]	57	F		Alive at 7 yr
59.	Nahas et al. (2007) [5]	58	F10/M2		Alive at 2.6 yr
60.	Miyamoto (2007) [1]	89	M	Colectomy	Died after 3 m
61.	Cheng et al. (2007) [71]	51	F	Proctocolectomy	NA
62.	Kong et al. (2007) [72]	48	F	TAE	Alive at 3 y
		53	F	NA	
63.	Clark et al. (2008) [73]	75	M		Alive at 20 m
		71	F		Alive at 31 m
		42	F		Alive at 13 m
		70	M		Alive at 14 m
		55	F	LAR	Alive at 19 m
		45	F		Alive at 23 m
		71	F		Alive at 5 m

**Table 1 Reported cases of squamous cell carcinoma of the colorectum (Data available from 1933 to 2009) (Continued)**

64.	Rasheed et al. (2009) [74]	55	F		Alive at 11 y
		50	M		Alive at 7 y
		69	F		Alive at 4 y
		61	M	APR	Alive at 4 y
		58	M	APR	Alive at 2 y
		41	F		Alive at 2 y
65.	Our Case	60	M	LAR	Alive at 15 m

NA: not available; F: female; M: male; LAR: low anterior resection; APR: abdominoperineal resection; TAE:transanal excision; y: years; m: months and d: days

the corresponding author of this manuscript and is accessible for review by the Editor-in-Chief of this journal

#### Acknowledgements

The authors gratefully acknowledge the Sher-I-Kashmir Institute of Medical Sciences, Kashmir for providing funds for this research work. The authors also gratefully acknowledge the technical staff, especially Miss Roohi and Mr. Reyaz of the Department of General Surgery for helping in the procurement of tumor tissue samples from the Operation Theater. We also thank the anonymous pathologists of the Department of Pathology for the histopathological assessment of the tumor tissues.

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#### Authors' contributions

ASS conceived and designed the study and wrote the manuscript. NS suggested the necessary changes and copyedited the manuscript. NAC and FQP procured and provided the tumor samples for the study. MAS coordinated the study and revised the manuscript. All authors read and approved the final manuscript.

#### Competing interests

The authors declare that they have no competing interests.

Received: 8 December 2009 Accepted: 30 November 2010

Published: 30 November 2010

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doi:10.1186/1752-1947-4-392

Cite this article as: Sameer et al: Squamous cell carcinoma of rectum presenting in a man: a case report. *Journal of Medical Case Reports* 2010 **4**:392.