



Current Trend of Solitary Rectal Ulcer Syndrome in a Tertiary Hospital in Northern India

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Abstract

Background: Solitary Rectal Ulcer Syndrome (SRUS) is an uncommon benign defecatory disorder characterized by a combination of symptoms, endoscopic and histological abnormalities. A scarce data is available about this often-misdiagnosed clinical entity.

Methods: All patients undergoing colonoscopic examinations for various indications who were diagnosed SRUS by colonoscopy and histopathology from August 2016 to December 2019 in the department of gastroenterology at Shifa Medical Centre, Srinagar, Kashmir, India were included in the study.

Results: 105 patients diagnosed as SRUS over a period of three years were included in the study. Mean age of the group was 38 ± 18 years with age range of 15 to 70 years; male to female ratio of 1.6:1. Bleeding per rectum was present in 77%, constipation in 66%, digital evacuation in 49%, and straining at stool in 58% patients. Ulcerative lesions were seen in 92.4% patients of whom solitary and multiple lesions were present in 82.5% and 17.5% respectively on colonoscopy. Polypoidal/nodular lesions were reported in 6 (5.7%) while erythematous mucosa was found in 2 (1.9%) patients. Biopsy revealed fibromuscular obliteration in 100% of patients, surface ulceration in 75 (72%) and crypt hyperplasia in 19 (18%) of patients.

Conclusion: Prevalence of SRUS among the patients undergoing colonoscopy for various indications was 2.1%. Bleeding per rectum was the most common symptom and ulcerative lesion was most common endoscopic finding.

Keywords: SRUS; Bleeding per rectum; Fibromuscular obliteration

Introduction

Solitary Rectal Ulcer Syndrome (SRUS) is a rare benign defecation disorder characterized by a combination of symptoms, endoscopic findings, and histological abnormalities. It was first described by Cruveihier in 1829, when he reported four unusual cases of rectal ulcers [1]. The term "solitary ulcers of the rectum" was used by Lloyd-Davis in the late 1930s and in 1969 the disease became widely recognized after a review of 68 cases by Madigan et al. [2], and few years later, a more comprehensive pathogenic concept of the disease was reported by Rutter et al. [3] SRUS is an infrequent and under-diagnosed disorder, with an estimated annual prevalence of one in 100000 persons. It is a disorder of young adults, occurring most commonly in the third decade in men and in the fourth decade in women. However, it has been described in children and in the geriatric population.

Solitary rectal ulcer is a misnomer because ulcers are found in 40% of patients, while 20% of patients have a solitary ulcer and the rest of the lesions differ in shape and size, including hyperemic mucosa to broad-based polypoid lesions [4].

Several etiological factors play role in formation of SRUS. Most common etiopathogenetic mechanism of SRUS is chronic mucosal hypoperfusion induced ischemic injury to the rectal mucosa and is associated with paradoxical contraction of the pelvic floor leading to mucosal prolapse and pressure necrosis of rectal mucosa [5,6]. High anal pressure causing incomplete evacuation in obstructed defecation, internal anorectal intussusceptions and descending perineal syndrome are other important factors described. Mechanical trauma due to digital self-evacuation is another possible cause [7].

Endoscopically SRUS is difficult to differentiate from other causes of rectal bleeding [8]. SRUS

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Table 1: Categorization of patients as per various age groups.

Age in Years	Frequency	Percent %
15-30	21	20
31-50	47	44.7
51-70	35	33.3
>70	2	1.9
Total	105	100

Table 2: Symptomatology analysis of the study patients.

Symptoms	Frequency	Percent %
Bleeding PR	81	77
Constipation	69	66
Straining at stool	61	58
Mucus per Rectum	42	40
Sense of incomplete Evacuation	55	52
Anemia	29	27
Digital Evacuation	52	49
Abdominal Pain	22	21
Tenesmus	22	21
Asymptomatic	14	13

is misnomer in sense it usually denominates a single ulcerative lesion with induration in rectum but the multiple, polypoidal or circumferential lesions do occur.

Scanty data on endoscopic and clinical spectrum of SRUS is available from this part of the world. Therefore, we carried out this study to see the clinical and endoscopic spectrum in patients with SRUS in our population.

Methods

In this study records of 5000 patients who underwent colonoscopic examination for various symptoms over a period of three years and five months from August 2016 to December 2019 in the department of gastroenterology at Shifa Medical Centre, Srinagar, Kashmir, India were analyzed. Out of them 105 patients were diagnosed as solitary rectal ulcer on the basis of clinical, colonoscopic and histopathologic features and were included in the study. Shifa Medical Centre is a high-volume tertiary care and referral center for gastrointestinal diseases.

Colonoscopy and histopathology

We divided lesions on endoscopy on the basis of number (solitary or multiple) and appearance (ulcerative, polypoidal/nodular). Histological features included were fibro muscular obliteration, surface ulceration, crypts and mucosal gland distortion.

Statistics

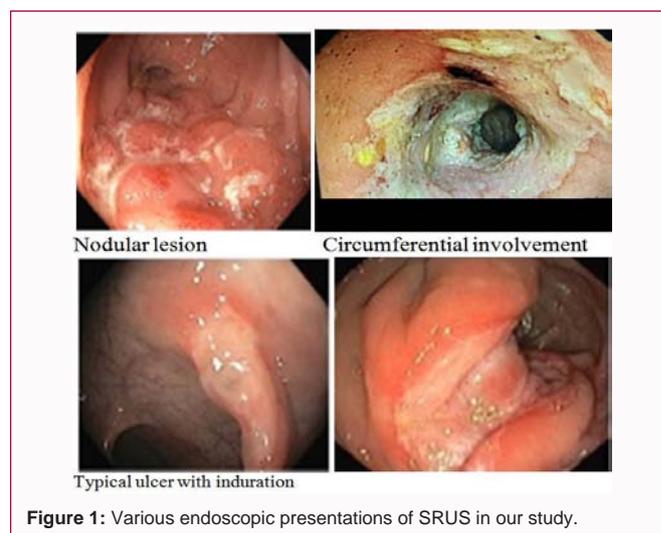
The data was analyzed on the SPSS version 22.0 (SPSS, Inc., Chicago, IL, USA) and frequency analysis performed. Continuous variables are presented as mean ± standard deviation and categorical variables as number of patients and percentages in parenthesis.

Results

Records of 105 patients diagnosed as solitary rectal ulcer over a period of three years were analyzed. The mean age of the patients was 41 years and range of 15 years to 70 years. Majority of patients (45%) were in age group of 31 years to 50 years and only 2 patients had age

Table 3: Various endoscopic features of SRUS in our study.

Endoscopic finding	Frequency	Percent
Ulcer (s)	97	92.4
Solitary lesion	80	82.5
Multiple lesion	17	17.5
Polypoidal/nodular	6	5.7
Erythema	2	1.9
Total	105	100



more than 70 years (Table 1). Male patients comprised 65 (62 %) with male to female ratio of 1.6:1.

The most common symptom was bleeding per rectum affecting 81 (77%) patients followed by constipation 69 (66%), straining on stool 61 (58%), digital evacuation 52 (49%), sense of incomplete evacuation 55 (52%). Anemia was seen in 27% patients (Table 2). Endoscopic findings revealed typical indurated ulcers in 97 (92.4%) patients and polypoidal (nodular) lesions in 6 (5.7%) patients. Solitary ulcer was seen in 80 (82.5%), multiple ulcers were seen in 17 (17.5%) patients (two ulcers in 10 patients, three ulcers in five patients and four ulcers in two patients (Table 3) (Figure 1)). The associated findings were hemorrhoids, CRC, polyps (Table 4).

Ulcer size ranged from 5 mm to 3 cm. Majority of patients 56 (57.7%) had ulcer size 5 mm to 10 mm, 27 (27.8%) patients had 11 mm to 20 mm and 14 (14.4%) patients had ulcer size 21 mm to 30 mm. Four patients (4.1%) had circumferential ulcers (Table 5). Biopsy of the lesion revealed fibromuscular obliteration in 100% of patients, surface ulceration in 75 (72%) and crypts hyperplasia in 21 (20%) patients (Table 6).

Associated endoscopic findings were hemorrhoids in 18 (26.7%), hyperplastic polyps in 3 (2.8%), adenomatous polyps in 4 (3.8%), diverticulosis in 3 (2.8%) patients.

Discussion

Solitary Rectal Ulcer Syndrome (SRUS) is a chronic benign disorder of defecation with characteristic clinical, endoscopic and histological features and was described by Madigan et al. [2]. Most common clinical symptom is bleeding per rectum and other symptoms include constipation, abdominal pain, and pain during defecation, tenesmus and mucous discharge [7]. Although mortality

Table 4: Associated endoscopic findings.

Associated endoscopic findings	Frequency (n)	Percentage (%)
Hemorrhoids	18	17
Adenomatous polyps	4	3.8
Hyperplastic polyps	3	2.8
Colorectal carcinoma	2	1.9
Diverticulosis	3	2.8

Table 5: Ulcer characteristics.

Ulcer size (mm)	Frequency	Percent
05-10	56	57.7
11-20	27	27.8
21-30	14	14.4
Total	97	100

Total of 97 patients had ulcers

Table 6: Spectrum of histological findings observed in the studied patients.

Histological finding	Frequency (n)	Percentage (%)
Fibromuscular obliteration	105	100
Surface Ulceration	75	72
Crypts distortion	21	20
Distortion of glands	16	15
Crypts hyperplasia	19	18

Table 7: Concomitant endoscopic features like hemorrhoids, polyps, diverticulosis, and malignancies have been reported in various studies.

	Present study	Behera et al. [10]	Abid S et al. [9]
	N (%)		
Hemorrhoids	18 (17 %)	10 (10.9)	7 (6 %)
Polyps	7 (6.6 %)	5 (5.4)	6 (5.5 %)
Diverticulosis	3 (2.8 %)	NA	NA
CRC	2 (1.9 %)	2 (2.2 %)	2 (2 %)

is not an issue with this disease but it has significant morbidity and poorly affects the quality of life of these patients.

In this study we analyzed the records of 5,000 patients who underwent colonoscopic examination for various symptoms over the study period of three years and five months. Among them 105 patients were diagnosed as solitary rectal ulcer syndrome on the basis of clinical, endoscopic and biopsy features and were included in the study. We found that the prevalence this disease was 2.1% among the patients undergoing colonoscopy for various indications which grossly shows that this disorder is not uncommon.

We found in our study male predominance (62% males and 38% females) with ratio of 1.6:1. Abid et al. [9]. Behera et al. [10] and Chiang et al. [11] also reported a similar male preponderance. On contrary two studies have demonstrated a slight female preponderance [12,13].

In our study age ranged from 15 to 70 years with a mean age of 41 years. The series from Cleveland Clinic [14] demonstrated a similar wide age range of 14 to 76 years Marchal et al. [13]. In his study reported an age range of 25 to 86 years.

The mean age of the patients was 38 ± 18 years; Behera et al. [10] reported mean age of 41 ± 19 years.

All patients in our series reported to the hospital because of their

clinical symptoms. Rectal bleeding, constipation, and abdominal pain were the most common symptoms as in other studies were rectal bleeding and constipation were the most common presentations [11,13-15].

In other studies authors have reported a higher proportion of asymptomatic patients. In these series SRUS was diagnosed incidentally during colonoscopy done for other reasons. In our study 14 (13%) patients were asymptomatic. Tjandra in his study reported that 26% of patients as asymptomatic [11].

Rectal digitations have been claimed to contribute to rectal injury [13], in up to 28% of the patients in other series [7]. In our study 32 (34.8%) patients gave such a history. Behera et al. [10] reported digital evacuation in 34 (36.9%) patients.

Eighty-seven (94.6%) of the patients in our study had rectal ulceration, with solitary lesion in only 78.3%. We found polypoidal lesion in 2.2% of patients on colonoscopy. Behera et al. [10] reported 83% patients had ulcerations with solitary and multiple ulcers in almost equal proportions. 17% patients had polypoidal lesions. Series published by Torres et al. [15] found that 65.3% of the patients had ulceration. Tjandra et al. [14] reported in his study that 29% of patients had ulcers and 44% had polyps. It is obvious from above data that SRUS has varied endoscopic presentation and all kinds of rectal lesions can be expected ranging from mild erythema to a solitary ulcer, multiple ulcers and polypoid lesions. Majority of the lesions in our study were located 5 cm to 10 cm from the anal verge on the anterior rectal wall. This location of the ulcer is probably due to excessive straining during defecation.

The size of rectal ulcer in our study ranged from 0.5 cm to 3 cm. Histopathology is necessary for the diagnosis of SRUS and excluding any other causes. The biopsy features are highly characteristic. Key histological features include fibromuscular obliteration of the lamina propria with splaying of muscularis mucosa upward between the crypts, thickened mucosa and glandular distortion [1,5]. However, these morphological features can also be seen in other benign defecation disorders including rectal prolapse, and inflammatory polyp [16,17]. The SRUS is differentiated from inflammatory bowel disease and chronic ischemic colitis by presence of collagen infiltration of the lamina propria [18].

In our study, we found fibromuscular obliteration in all cases and surface ulceration in more than half of the patients. Other findings were crypt distortion, mucosal gland distortion. Our findings were similar with to the study by Behera et al. [10] from India and Abid et al. [9] from Pakistan. Al Brahmin et al. [19], in his study found surface ulcerations and crypt distortion in all 13 patients.

Concomitant endoscopic features like hemorrhoids, polyps, diverticulosis, and malignancies have been reported in various studies. We have summarized them in Table 7.

Conclusion

In our study we found that SRUS is the diagnosis in 2% of patients undergoing colonoscopy for various indications. Rectal bleeding, abdominal pain, constipation and digital evacuation of feces are common presentations. Ulcerative lesion was the most common endoscopic finding.

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