DOI: https://doi.org/10.53350/pjmhs02024181195

ORIGINAL ARTICLE

Solitary Rectal Ulcer Syndrome in Patients Presenting with Lower Gastrointestinal Bleeding

NOWSHERWAN[1], RASHID AHMAD[2], NAWAZ KHAN[3], GHAZALA SHAHEEN[4], UMAIR LATIF[5], ZIA UL HAQ[6]
[1,3,4]Associate Professor Internal Medicine, Pak International Medical College, Peshawar
[2]Assistant Professor Internal Medicine, Pak International Medical College, Peshawar
[5]Assistant Professor Gastroenterology, Pak International Medical College, Peshawar
[6]Assistant Professor Pulmonology, Pak International Medical College, Peshawar
Correspondence to: Rashid Ahmad, Email: dr.rashidkmcite@gmail.com

ABSTRACT

Background: Solitary Rectal Ulcer Syndrome (SRUS) remains a rare, often overlooked identification of lower gastrointestinal bleeding due to its overlap with other colorectal disorders. It is usually preceded by chronic constipation and, in some circumstances, rectal prolapse. This study investigates the clinical data, treatment results, pathology, endoscopic, and histological features of diagnosed SRUS lesions in patients with lower gastrointestinal bleeding.

Methods: This prospective observational research was done at the Peshawar Institute of Medical Sciences, Hayatabad, from January 2022 to December 2022. A total of 101 adults suffering from rectal bleeding were included in the study. Clinical symptoms were noted using a precise capturing tool. Every participant underwent either sigmoidoscopy or colonoscopy and received biopsy specimens for histological validation. A tailored approach to treatment was taken, and results were evaluated following an observation period of at least three months.

Results: Most patients were between 30 and 50 years of age, with a slight male predominance. Constipation (76.2%), straining (80.2%), and mucus discharge (61.4%) were among the most common symptoms. Most ulcers were solitary and located on the anterior or posterior rectal wall. Histopathological findings included fibromuscular obliteration and glandular crypt distortion in most cases. Conservative and medical treatment improved symptoms in 75.2% of patients, while 17.8% required surgical intervention. Recurrence was noted in 21.8% of cases.

Conclusion: SRUS should be taken into account in patients suffering from chronic rectal bleeding and defecation difficulties. An endoscopic procedure and a biopsy remain critical for obtaining a diagnosis. Early identification paired with tailored therapies allies with positive outcomes; however, the potential recurrence in some patients is troubling.

Keywords: Solitary Rectal Ulcer Syndrome, Rectal Bleeding, Constipation, Endoscopy, Histopathology, Treatment Outcome, Rectal Prolapse, Peshawar Institute of Medical Sciences.

INTRODUCTION

Solitary Rectal Ulcer Syndrome (SRUS) is a rare condition that remains poorly understanding, which pertains to the rectum and is commonly marked by chronic straining during bowel movements, bleeding from the rectum, and mucosal ulceration found through an endoscopy. While it is referred to as a solitary ulcer, SRUS does not mean it can have more than one ulcer and polypoid lesions, complicating the diagnosis further. Its clinical features pose as other conditions like inflammatory bowel syndrome, hemorrhoids, or lesions in the colon and rectum, which usually result in misdiagnosis and unwanted treatment due to the detours taken to reach the diagnosis[1-3].

Chronic constipation, straining and even digital rectal examinations are believed to give rise to SRUS, because of the persistent damage inflicted on the rectal mucosa. Such injurious strain leads to decreased blood flow to the protruding tissue or mucosa, as well as ulceration beyond visible skin lesions, and changes that can be observed include fibromuscular obliteration of the lamina propria, along with stricture formation and alteration of the glands or crypts. These changes are considered the pathognomonic features of the disease. Though believed to be infrequent, the actual incidence of SRUS is concerning as it is underreported, owing to its features melding with other prominent anorectal disorders[4-6].

Individuals with these conditions frequently complain of rectal bleeding, mucus excretion, the sensation of not completely emptying their bowels, and in rarer cases, rectal prolapse. These symptoms may cause significant distress which is worsened by the need for excessive medical consultation and tests. Therefore, there is a need for more restraint, especially after conventional causes of rectal bleeding have been eliminated[7-9].

This study was undertaken to better understand the clinical spectrum, endoscopic features, and histopathological findings of SRUS in patients presenting with lower gastrointestinal bleeding. The study aims to provide insights to aid early recognition and appropriate management of this often-overlooked condition by analyzing treatment approaches and short-term outcomes.

Received on 01-06-2023
Accepted on 25-12-2023

METHODOLOGY

The study spanned over a year, specifically from January 2022 until December 2022, with the Peshawar Institute of Medical Sciences located in Hayatabad, Peshawar serving as the research site. This is an observational study conducted with a prospective approach, focusing on evaluating the clinical and endoscopic manifestations, the pathological changes, and treatment outcomes of patients diagnosed with SRUS and lower gastrointestinal bleeding. A sample of 101 patients was recruited using non-probability consecutive sampling. These patients were drawn from the outpatient and inpatient departments of the hospital under specific eligibility criteria delineated by the researchers. Ethical permission was secured from the institutional review board, and all subjects consented to participate in writing while fully ensuring anonymity during and after the study.

All adult patients aged 18 years and above who presented with rectal bleeding and were later confirmed to have SRUS through endoscopy and biopsy were included. Patients with other known causes of rectal bleeding, such as inflammatory bowel disease, colorectal malignancy, infectious or ischemic colitis, were excluded, as were those who did not consent to biopsy or follow-up. Data collection involved a structured clinical evaluation that recorded patient symptoms, including bleeding duration, constipation, tenesmus, mucus discharge, history of straining, manual evacuation habits, and rectal prolapse.

Each patient underwent flexible sigmoidoscopy or colonoscopy, depending on the clinical requirement. The number, site, and appearance of ulcers were documented. Biopsies were taken from ulcerated areas and sent to the hospital's pathology laboratory. The histopathological analysis focused on identifying key features of SRUS, such as fibromuscular obliteration, crypt distortion, and inflammatory infiltration, confirming the diagnosis.

Based on clinical severity and endoscopic findings, patients were managed through conservative methods, medical therapies, or surgical interventions where needed. Follow-up assessments were conducted for at least three months to evaluate symptom resolution or recurrence. Senior gastroenterologists performed endoscopic procedures, and histology was interpreted by experienced pathologists, ensuring the reliability of findings. The data collection form was pre-tested and reviewed for consistency, while statistical analysis was carried out using SPSS version 25. Frequencies and percentages were used to describe categorical variables, and associations were tested using the Chi-square test with significance set at a p-value less than 0.05.

RESULT

In this study comprising 101 patients diagnosed with SRUS, the age group of 30 to 50 years showed the highest prevalence (45.5%), followed by those over 50 and those below 30. The age group was significantly associated with SRUS ($p = 0.041$), indicating that middle age may present a peak risk window for disease onset. Males constituted more cases (59.4%), although this gender difference was not statistically significant ($p = 0.087$). Urban residents accounted for a substantial majority (62.4%), and the association with urban dwelling was significant ($p = 0.028$), suggesting a potential link between lifestyle factors and SRUS. BMI distribution showed most patients were in the normal or overweight categories, but BMI was not significantly associated with SRUS ($p = 0.122$).

Table 1: Demographic Characteristics of Patients with SRUS (n = 101)

Variable	Categories	Frequency (n)	Percentage (%)	p-value
Age Group (years)	<30	28	27.7%	
	30–50	46	45.5%	0.041*
	>50	27	26.7%	
Gender	Male	60	59.4%	0.087
	Female	41	40.6%	
Residence	Urban	63	62.4%	0.028*
	Rural	38	37.6%	
BMI Category	<18.5 (Underweight)	10	9.9%	
	18.5–24.9 (Normal)	49	48.5%	0.122
	≥25 (Overweight)	42	41.6%	

*p < 0.05, statistically significant

Table 2: Clinical Presentation of SRUS Patients (n = 101)

Variable	Categories	Frequency (n)	Percentage (%)	p-value
Duration of Bleeding	<1 month	22	21.8%	
	1–3 months	39	38.6%	0.033*
	>3 months	40	39.6%	
Constipation	Yes	77	76.2%	<0.001*
	No	24	23.8%	
Straining on Defecation	Yes	81	80.2%	<0.001*
	No	20	19.8%	
Mucus Discharge	Yes	62	61.4%	0.015*
	No	39	38.6%	
Rectal Pain	Yes	46	45.5%	0.092
	No	55	54.5%	
Rectal Prolapse History	Yes	28	27.7%	0.049*
	No	73	72.3%	
Digital Evacuation Habit	Yes	16	15.8%	0.026*
	No	85	84.2%	

Table 3: Endoscopic and Histopathological Features of SRUS Patients (n = 101)

Variable	Categories	Frequency (n)	Percentage (%)	p-value
Number of Ulcers	Single	76	75.2%	
	Multiple	25	24.8%	0.021*
Location of Ulcer	Anterior rectal wall	47	46.5%	
	Posterior rectal wall	39	38.6%	0.049*
	Lateral wall	15	14.9%	
Endoscopic Appearance	Ulcerated lesion	68	67.3%	
	Polypoid/nodular	21	20.8%	0.036*
	Erythematous mucosa	12	11.9%	
Fibromuscular Obliteration	Present	89	88.1%	<0.001*
	Absent	12	11.9%	
Glandular Crypt Distortion	Present	72	71.3%	<0.001*
	Absent	29	28.7%	
Inflammatory Infiltrate	Present	93	92.1%	0.006*
	Absent	8	7.9%	

Table 4: Treatment Modalities and Outcomes in SRUS Patients (n = 101)

Variable	Categories	Frequency (n)	Percentage (%)	p-value
Type of Treatment	Conservative (diet, behavior)	49	48.5%	
	Medical (steroids, sucralfate)	34	33.7%	
	Surgical (rectopexy, excision)	18	17.8%	0.012*
Symptom Improvement	Yes	76	75.2%	<0.001*
	No	25	24.8%	
Recurrence on Follow-up	Yes	22	21.8%	0.031*
	No	79	78.2%	
Follow-up Duration	<3 months	44	43.6%	
	≥3 months	57	56.4%	0.064

Most patients (78.2%) reported experiencing rectal bleeding for more than one month, and this duration showed a significant association with SRUS ($p = 0.033$). Constipation and straining during defecation were both highly prevalent, affecting over 75% of the patients and demonstrating strong statistical significance ($p < 0.001$ for both). Mucus discharge, another common symptom, was significantly associated with SRUS ($p = 0.015$). While 45.5% of patients experienced rectal pain, this finding was not statistically significant. Other notable associations included a history of rectal prolapse (27.7%) and manual digital evacuation (15.8%), both of which were significantly linked to SRUS ($p = 0.049$ and $p = 0.026$, respectively), reinforcing their potential role in pathogenesis.

On endoscopy, a solitary ulcer was observed in most patients (75.2%), with this pattern being significantly associated with the diagnosis ($p = 0.021$). Ulcers were most frequently located on the anterior (46.5%) and posterior (38.6%) rectal walls, with posterior localization being statistically significant ($p = 0.049$). In terms of appearance, ulcerated lesions were the most common (67.3%), while polypoid or nodular forms were less frequent but still statistically associated ($p = 0.036$). Histopathology revealed the classic features of SRUS in most cases, including fibromuscular obliteration (88.1%, $p < 0.001$), glandular crypt distortion (71.3%, $p < 0.001$), and inflammatory infiltrates (92.1%, $p = 0.006$), confirming biopsy as a crucial diagnostic step.

Among the treatment strategies employed, conservative management was the most commonly used (48.5%), followed by medical therapy (33.7%) and surgical intervention (17.8%). Surgical treatment showed a statistically significant association ($p = 0.012$), likely reflecting its necessity in more severe or non-responsive cases. Clinical improvement was seen in 75.2% of the patients, with this outcome being highly significant ($p < 0.001$), indicating the overall effectiveness of tailored treatment. However, recurrence was reported in 21.8% of cases, which also showed statistical significance ($p = 0.031$). While longer follow-up allowed for better monitoring, its effect on recurrence was not statistically significant ($p = 0.064$).

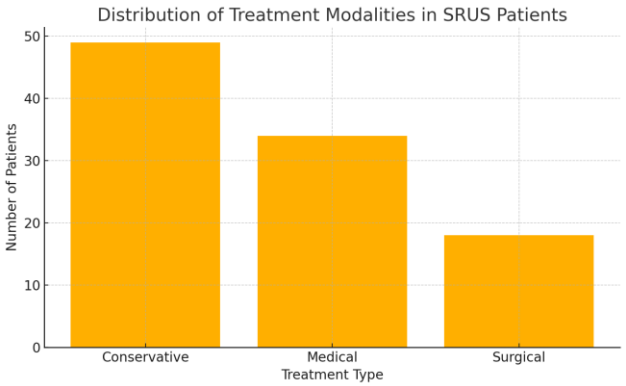

Figure 1: The bar graph illustrates the distribution of treatment strategies adopted for patients diagnosed with solitary rectal ulcer syndrome. It shows that nearly half of the patients were managed with conservative approaches, including dietary adjustments and behavioral therapies such as proper toilet training and avoidance of straining. Medical therapy, consisting of pharmacological agents like topical steroids or sucralfate enemas, was administered in about one-third of the cases. Surgical intervention was the least employed method, applied only in selected patients with severe or recurrent disease. The visual trend emphasizes the clinical preference for non-invasive treatments, reserving surgery for those not responding to initial management. This pattern reflects current practice standards to minimize procedural risks while achieving symptom relief.

DISCUSSION

The diagnosis remains difficult given the potential for misdiagnosis and the varied clinical presentation of Solitary Rectal Ulcer Syndrome (SRUS). In our research, SRUS largely affected middle-aged adults, most severely those aged 30 to 50. This corresponds with research that states SRUS is most commonly seen in people in their thirties to fifties but can occur at any age[10-12]. The male predominance observed in our cohort also agrees with studies, although some literature reports no clear gender preference, likely reflecting regional and referral patterns[13-15].

Many of our patients resided in urban areas, which may reflect environmental or behavioral risk factors. Urban lifestyles often involve sedentary habits, lower fiber intake, and increased psychological stress, all of which are known contributors to defecation disorders. Constipation, straining, and mucus discharge were common presenting complaints in our patients. These findings are consistent with previous reports, such as those emphasizing chronic straining and digital rectal manipulation as major contributing factors to mucosal trauma and subsequent ulcer formation[16-18].

Endoscopically, most patients exhibited solitary anterior or posterior rectal ulcers, a classic feature of SRUS. However, a smaller number had multiple ulcers or polypoid lesions, underscoring the syndrome's clinical variability. Polypoid forms are particularly prone to misdiagnosis as neoplasms, as highlighted by a study, stressing the importance of biopsy for accurate differentiation[19]. Histologically, hallmark findings such as fibromuscular obliteration of the lamina propria and crypt architectural distortion were present in most patients, consistent with studies, reinforcing that histology remains the gold standard for diagnosis[20].

Treatment outcomes in this study showed that conservative and medical management resulted in improvement in the majority of patients, though recurrence was observed in over 20% of cases. These findings are comparable to outcomes reported in a cohort study[21]]where behavioral therapy combined with dietary modifications improved symptoms in most cases. Still, recurrence remained an issue in long-term follow-up. Surgical interventions were employed in patients with severe or refractory symptoms and yielded moderate success, as similarly documented[22].

Despite advances in diagnostic methods, SRUS often remains underdiagnosed or misdiagnosed, primarily due to its overlap with inflammatory bowel disease and malignancies. This study emphasizes the need for a high index of suspicion, especially in patients with persistent rectal bleeding and defecation-related symptoms. Early diagnosis and tailored management can prevent complications and improve patient outcomes.

CONCLUSION

Solitary Rectal Ulcer Syndrome, while rare, represents a significant clinical concern for chronic rectal bleeding and defecatory dysfunction among middle-aged patients. The syndrome is better understood in the context of constipation and manual stool disimpaction, and its diagnosis relies on the integration of endoscopic examination and tissue sampling. In this study, most patients achieved favorable outcomes following conservative and pharmacologic management, although some patients did require surgical treatment. The results of SRUS draw attention to the importance SRUS plays in patients with vague lower gastrointestinal tract symptoms while underscoring the need for form multidisciplinary approach involving dietetic assessment, behavioral modification, and prompt surgical intervention if required. Timely diagnosis and treatment are fundamental, underlining the need for enhanced clinical awareness to prevent misdiagnosis.

REFERENCES

1. Abusharifah, O., et al., Solitary rectal ulcer syndrome in children and adolescents: a descriptive clinicopathologic study. International Journal of Clinical and Experimental Pathology, 2021. 14(4): p. 399.

2. Poddar, U., et al., Solitary rectal ulcer syndrome in children: a report of 140 cases. Journal of pediatric gastroenterology and nutrition, 2020. 71(1): p. 29-33.
3. Nkurunziza, L., et al., Solitary rectal ulcer syndrome about 26 cases and literature review. Saudi J Med Pharm Sci, 2022. 8(6): p. 313-8.
4. Gouriou, C., et al., Solitary rectal ulcer syndrome in 102 patients: Do different phenotypes make sense? Digestive and Liver Disease, 2021. 53(2): p. 190-195.
5. Takahashi, Y., et al., Nature and clinical outcomes of acute hemorrhagic rectal ulcer. Diagnostics, 2022. 12(10): p. 2487.
6. Sugawa, C., et al., Acute hemorrhagic rectal ulcer: Experience in 11 patients at an urban acute care center in the USA: A case series. Medicine, 2020. 99(18): p. e19836.
7. Qari, Y. and M. Mosli, A systematic review and meta-analysis of the efficacy of medical treatments for managing solitary rectal ulcer syndrome. Saudi Journal of Gastroenterology, 2020. 26(1): p. 4-12.
8. Shah, A., S. Bohra, and S. Desai, Argon plasma coagulation—an effective treatment for solitary rectal ulcer syndrome: A single-center experience from western India. Indian Journal of Gastroenterology, 2021. 40: p. 35-40.
9. Abdelatty, M.A., et al., Solitary rectal ulcer syndrome (SRUS): observational case series findings on MR defecography. European Radiology, 2021. 31(11): p. 8597-8605.
10. Rajwana, Y., K.J. Ezeh, and E. Spira, Acute Hemorrhagic Rectal Ulcer Syndrome: A Known Yet Often Overlooked Etiology of Gastrointestinal Bleeding in Chronically Ill Patients. Cureus, 2022. 14(7).
11. BOTIANU, A.-M., et al., RECTAL ULCER COMPLICATED WITH LOWER GASTROINTESTINAL BLEEDING. A CASE STUDY. 2020.
12. Öcal, S. and M.M. Çatlı, Lower gastrointestinal bleeding. Journal of Experimental and Clinical Medicine, 2021. 38(2s): p. 23-32.
13. Zia, N., L. Alam, and N. Ashraf, Endoscopic Finding In Patients Presenting With Lower Gastrointestinal Bleed-A Study From A Developing Country. Pakistan Armed Forces Medical Journal, 2021(1): p. 215.
14. Nadi, A., et al., The Impact of Argon Plasma Coagulation in the Treatment of a Solitary Rectal Ulcer Syndrome Revealed by Massive Hemorrhage. Cureus, 2022. 14(3).
15. RAJEEVAN, S., et al., An Unusual Case of Rectal Bleed in an Adolescent: Solitary Rectal Ulcer Syndrome Mimicking Rectosigmoid Malignancy. Journal of Clinical & Diagnostic Research, 2022. 16(2).
16. Ali, N., et al., Clinical and Pathological Study of the Rectal Mucosa in Cases of Bleeding Per Rectum. Benha Journal of Applied Sciences, 2021. 6(4): p. 57-63.
17. Nahid, K.L., et al., Solitary Rectal Ulcer Syndrome in a Teenage Girl: A Case Report. Dhaka Shishu (Children) Hospital Journal, 2020. 36(1): p. 67-70.
18. Tung, S., et al., Challenges in Differentiating Between Solitary Rectal Ulcer Syndrome and Inflammatory Bowel Disease in the Pediatric Population. International Journal of Clinical Pediatrics, 2021. 10(2-3): p. 57-63.
19. Anilir, E., A Rare Rectosigmoid Mass Mimicking Cancer; Solitary Rectal Ulcer. Nigerian Journal of Clinical Practice, 2021. 24(8): p. 1255-1258.
20. Cosarpinar, B.A., et al., A Rare Cause of Rectal Bleeding in Children Mimicking Rectal Cancer/Rektal Tümörü Düsündüren Soliter Rektal Ülser Olgusu. Journal of Academic Research in Medicine, 2021. 11(2): p. 230-234.
21. Arı, D., et al., The efficacy of biofeedback therapy in patients with solitary rectal ulcer and dyssynergic defecation. Digestive Diseases, 2022. 40(6): p. 728-733.
22. Soni, A., Etiological Profile of Patients with Lower Gastrointestinal Bleed Undergoing Colonoscopy in a Tertiary Care Center. JK Science: Journal of Medical Education & Research, 2021. 23(1): p. 38-42.

This article may be cited as: Nowsherwan, Ahmad R, Khan N, Shaheen G, Latif U, Haq ZU: Solitary Rectal Ulcer Syndrome in Patients Presenting with Lower Gastrointestinal Bleeding. Pak J Med Health Sci, 2024;18(1):195-198.