

Research Article

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Evaluation of Solitary Rectal Ulcer Syndrome from Twenty-Four Iraqi Patients

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ABSTRACT

Background: Solitary rectal ulcer syndrome (SRUS) is a rare benign rectal disorder that can present with bleeding, mucus passage, straining during defecation, constipation, rectal prolapse, and a feeling of incomplete evacuation. It is characterized by a combination of clinical findings, histological abnormalities, and symptoms. Since patients frequently come with lesions that are neither solitary nor ulcerated, the nomenclature of the syndrome is deceptive. Multiple factors may be implicated in the etiology and pathogenesis of the illness, which is usually linked to pelvic floor abnormalities.

Objectives: To study the distribution of age and sex for this syndrome among a sample of Iraqi patients and to further characterize this syndrome in our population.

Materials and Methods: A retro-prospective, descriptive single-center study with this research design was carried out at the Baghdad Gastroenterology and Hepatology Teaching Hospital involved reading reports from (1784) lower gastrointestinal endoscopies (sigmoidoscopy and colonoscopy) performed at the Baghdad Gastroenterology and Hepatology hospital over the course of fourteen months. Of those, twenty-four patients who met the requirements for the clinical, endoscopic, and histological diagnosis of SRUS were examined and monitored.

Results: Sixteen patients were female and eight patients were male, mean age was (26.5±9.69), mean duration of symptoms until diagnosis was 12.083 months ±11.5. The most frequent symptom was bleeding per rectum (95.8%). All patients (100%) were subjected to several treatment options, they were advised on normal defecatory behavior and bowel habits, Sulfasalazine enema 1-2gm/day for (3-6 months), sucralfate enema (2gm/day for 3 months), only four patients (16.6%) ended with endoscopic treatment and two patients (8.3%) ended with surgery.

Conclusion: SRUS is a chronic, benign disorder in young adults, often related to straining or abnormal defecation. SRUS remains a well-defined but nonspecific entity with varied presentation, characterized by a rectal lesion caused by straining during defecation. Clinicians, surgeons, and pathologists should be aware of the features of SRUS so that it is not confused with other conditions.

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Received: May 06, 2023; **Accepted:** May 10, 2023; **Published:** May 16, 2023

Keywords: SRUS, Sigmoidoscopy, BPR

Introduction

The unusual rectal illness known as solitary rectal ulcer syndrome (SRUS) is defined by a mix of symptoms, clinical findings, and histological abnormalities. It may show symptoms including bleeding, mucus passage, straining while urinating, and a feeling of incomplete evacuation. The lesion was initially noted in 1829; however, it was not well known until 1969 that its clinical signs and histopathology were documented [1,2]. Its incidence is unknown due to its rarity, but has been calculated in one study to be 1 in 100,000 [3]. In one retrospective analysis, the median age ranged

from 14 to 76 years for 80 individuals, with 48 being the median age [4]. Despite the fact that several investigations have revealed gender differences, men and women seem to be affected equally. Since patients frequently come with lesions that are neither solitary nor ulcerated, the nomenclature of the syndrome is deceptive. In most individuals, the lesions are within 10 cm of the anal margin in the anterior rectal wall. Endoscopic and radiologic abnormalities might range from erythema to polypoid and mass lesions (which resemble rectal cancer) to mucosal ulcerations [5]. Misdiagnosis is therefore widespread. In one study, up to 26% of patients had an inaccurate first diagnosis, most frequently being told they had an ulcer, inflammatory bowel disease, or adenomatous changes [6, 7].

The presence or absence of symptoms is possible [8]. The most prevalent symptoms in an illustrative series were rectal bleeding (56%), straining (28%), and pelvic fullness (23%) [6]. Pain, tenesmus, incontinence, and mucous discharge were less frequently reported. Uncertainty surrounds the pathophysiology of a single rectal ulcer. Individual accounts, meanwhile, seemed to point to a variety of factors having a causal impact. Different etiologies can have contributed to the emergence of the final lesion. Rectal prolapse and paradoxical contraction of the puborectalis muscle, which can cause rectal trauma by two separate processes, are frequent findings in many publications. [9-10].

Aims of The Study

We did this study and examined the presentation, clinical characteristics, endoscopic results, histological characteristics, and treatment in order to:

- 1) Examine the age and sex distribution of this disease in patients from Iraq.
- 2) Describe the clinical and pathological characteristics of this syndrome in more detail in our community, compare them to accounts in the literature, and determine whether the characteristics of the disease are affected by the location.
- 3) Raise physicians', surgeons', and pathologists' knowledge of this condition's high mimicry of other diseases.
- 4) Analyzing how well patients respond to various treatment techniques.

Materials and Methods

In the Gastroenterology and Hepatology teaching hospital in Baghdad, a retro-prospective, descriptive single-center study was used for the research. More than 1784 lower gastrointestinal endoscopies (sigmoidoscopy and colonoscopy) were performed at a gastroenterology facility over the course of the study's fourteen-month duration. Of those, (24 patients) were evaluated and followed up on because they fully met the clinical, endoscopic, and histological criteria for the diagnosis of SRUS.

The range of ages at the time of presentation was 8 to 42 years, with a mean age of 26.5 years (SD: 9.69). Clinical evaluation of these patients included a history of their symptoms prior to diagnosis, their defecation disorders (constipation, diarrhea, straining during defecation, digital evacuation, incontinence), perianal and abdominal pain, rectal bleeding, mucus discharge, rectal prolapse, weight loss, use of medications, tenesmus, and other points in their medical history like backache, skin rash, and mouth ulcer.

Each patient underwent a rectal and abdominal check to look for prolapse or bleeding. Under the influence of pethidine, diazepam, and occasionally general anesthesia, Pentax EC-3890Fi, Pentax EC-3890TK cameras were used for sigmoidoscopic or whole colonoscopic examinations. These endoscopic operations were performed following laxatives and repeated enemas for preparation. Different endoscopists at the GIT hospital performed these endoscopic operations. A number of samples (4-6) were collected from the lesion's margin and the surrounding mucosa during the endoscopic operation. Multiple pathologists evaluated and analyzed these samples after they had been stained with eosin and hematoxylin.

The diagnosis was made in accordance with the Madigan and Morison 1 histopathological criteria:

- 1) Obliteration of lamina propria fibrous.
- 2) Disorientation of the muscularis mucosa.
- 3) Muscle fiber extension into the lamina propria.

Every patient underwent a general stool examination in addition to a biochemical and hematological evaluation. In terms of treatment, patients with constipation were recommended to refrain from straining during defecation and to consume a high-roughage diet or supplemental fiber. All patients received a variety of medications, such as xylocaine gel, sucralfate enema, and sulfasalazine enema (1-2 grams per day for 3-6 months). According to the patient's assessment of symptoms, the clinical endoscopic and histological status were evaluated at presentation and during follow-up at six months. The results were classified as no symptoms, partially improved, unchanged, or worse. Eighteen patients had complete medical records and follow-up information accessible due to the loss of six patients during follow-up. Number, percentage, and mean standard deviation were used to order all of the variables.

Results

The research was conducted in the Gastroenterology and Hepatology teaching hospital in Baghdad using a retro-prospective, descriptive single-center methodology. Over the fourteen-month trial period, a gastroenterology center performed more than 1784 lower gastrointestinal endoscopies (sigmoidoscopy and colonoscopy). Given that they completely satisfied the clinical, endoscopic, and histological requirements for the diagnosis of SRUS, (24 patients) of those patients were examined and monitored.

The ages of the participants ranged from 8 to 42, with a mean age of 26.5 years (SD: 9.69).

A history of these patients' symptoms prior to diagnosis, defecation disorders (constipation, diarrhea, straining during feces, digital evacuation, incontinence), perianal and abdominal pain, rectal bleeding, mucus discharge, rectal prolapse, weight loss, medication use, tenesmus, and other points in their medical history, such as backache, skin rash, and mouth ulcer, were all taken into consideration during the clinical evaluation.

Rectal and abdominal checks were performed on each subject to check for prolapse or bleeding.

Pentax EC-3890Fi, Pentax EC-3890TK cameras were used for sigmoidoscopic or total colonoscopic examinations while the user was under the influence of pethidine, diazepam, and occasionally general anesthesia. Following preparation with laxatives and repeated enemas, these endoscopic procedures were carried out. These endoscopic procedures were carried out at the GIT hospital by various endoscopists. During the endoscopic procedure, 4-6 samples were taken from the lesion's perimeter and the surrounding mucosa. These samples were stained with eosin and hematoxylin and examined by several pathologists. According to the histopathological criteria set forth by Madigan and Morison 1, the diagnosis was made:

- 1) lamina propria fibrous obliteration
- 2) Obliteration of the muscularis mucosa
- 3) Extension of muscle fibers into the lamina propria

In addition to biochemical and hematological tests, each patient received a general stool examination. Patients with constipation were advised to avoid straining during defecation and to have a high-roughage diet or supplementary fiber as part of their treatment. All patients received a range of drugs, including sulfasalazine enema (1-2 grams per day for 3-6 months), sucralfate enema, and xylocaine gel. The clinical endoscopic and histological status was assessed at presentation and during follow-up at six months in accordance with the patient's appraisal of their symptoms. No symptoms, a partial improvement, an unchanged outcome, or a worse result were the categories for the findings. Due to the loss of six patients during follow-up, 18 patients had complete access

to their medical records and follow-up data. All of the factors were ranked using a combination of numbers, percentages, and the mean standard deviation.

Discussion

Our study’s (table 1) showed increased SRUS incidence when compared to other studies [11, 12], which can be attributed to increased knowledge of this condition as well as the fact that the Baghdad Gastroenterology teaching hospital is a tertiary facility. Similar findings of female predominance with a female to male ratio of 2:1 was found in additional research whereas male predominance was found in other investigations [13-16]. This study’s mean age, which spanned from 8 to 42 years, was lower than that of other research, which ranged from 30 to 40 years [13-15, 17, 18]. The increase in SRUS consciousness in our nation can be attributed to this disparity.

The median time between the onset of symptoms and when patients presented to the Baghdad GIT hospital for diagnosis was (12.083) months, with a range of (1-36) months, which was comparable to prior research conducted in Saudi Arabia and India when the mean interval was approximately 10 months , the most prevalent symptom in our patients was bleeding per rectum [12,13]. The most typical finding was a triad of rectal bleeding, constipation, and abdominal pain. Constipation and rectal bleeding were the most frequent presentations in other series as well [13, 14]. This was also true for the Shubbar study A.H. in AL-Yarmouk hospital and Dehghani SM et al [18,19]. This similarity may be due to the ignoring of other symptoms when BPR is present. In (79.1%) of our patients’ clinical evaluations, rectal prolapse was discovered. And on endoscopic examination, 87.5 percent, slightly more than in prior research, since overt or covert mucosal prolapse is the most prevalent underlying pathogenetic mechanism in SRUS, this hypothesis was corroborated by our observation of straining during defecation (87.5%), constipation (83.3%), and digital evacuation (37.5%) [4,13,14,20]. Self-digitation maneuvers to prevent rectal prolapse or to evacuate an impacted stool may also induce direct trauma of the mucosa and ulceration [10]. Only two of our patients (or 8.3%) had polypoid-like lesions; the majority had ulcers. The majority of patients’ ulcers (83.3%) were located anteriorly, 3 circumferentially, and 1 posteriorly. The mean separation from the anal verge was (8.5) (SD1.69) meters. These outcomes concurred with other investigations [4,13,14,18].

In our investigation, all patients (100%) displayed the three histological changes required for the diagnosis of SRUS: fibrous obliteration of the lamina propria, muscularis mucosa hypertrophy, and regenerative changes in the crypts. These concur with the majority of other investigations [4, 13, 14, 15, 18, 21]. Regarding SRUS treatment, there is no consensus, and a number of modalities have not been shown to be effective [22]. The first steps in treating SRUS involve patient education and behavioral adjustment [23]. Improvement occurred in 44.4% of cases, disappearance in 33.3%, and persistence in 22.2%. These outcomes concur with another research [24,25]. which demonstrate: assuring the patient that the lesion is benign; promoting a high-fiber diet; avoiding straining; controlling bathroom behavior; and making an effort to discuss any psychological concerns. Different people have responded differently to using a high-fiber diet along with

bulking laxatives and stool softeners. These dietary and behavioral changes are most successful in patients who have mild to moderate symptoms. Topical therapy yields outcomes that are consistent with other studies in terms of clinical, endoscopic, and histological responses [26]. This is explicable by the aluminum complex salts found in sucralfate enema, which coat the rectal ulcer and create a barrier against irritants, enabling the ulcer to heal. By lowering inflammatory responses, sulfasalazine enemas may also aid in the healing of ulcers. The long-term advantages of these treatments, however empirical and used in uncontrolled studies, merit additional research [27, 28].

Table 1: Age and Sex Group of SRUS

Number of Patients	24
Age Range (R)	8-42y
Mean ± SD	9.6y
Sex	
Male	8
Female	16
Female to male ratio	2:1

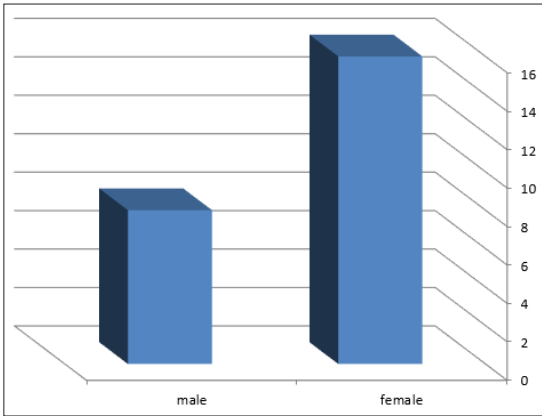


Figure 1: Age Group of SRUS

Table 2: Demonstrated the Symptoms According to Their Frequency

Symptoms	Number	Percentage
Bleeding per rectum	23	95.8%
Abdominal pain	22	91.6%
Straining at defecation	21	87.5%
constipation	20	83.3%
Rectal prolapse	19	79.1%
Mucus discharge	18	75%
Anorectal pain	18	75%
tenesmus	13	54.1%
Digital evacuation	9	37.5%
Normal bowel motion	3	12.5%
Diarrhea	2	8.3%
Incontince	2	8.3%
Alternating bowel motion	1	4.1%

Table 3: Endoscopic Finding in Study Group

Appearance	No.	percentage
No ulcer	3	12.5%
Ulcer no.	21	87.5%
One ulcer	15	62.5%
Multiple ulcers	6	25%
Distance of lesion from anal verge Mean Range (cm)	8.5±SD1.69 5-12	
Location of rectal wall ulcer		
Anterior	20	83.3%
Posterior	1	4.1%
Circumferential	3	12.5%
Erythematous area	1	4.1%
Polypoid area	2	8.3%
Prolapse of rectal wall	21	87.5%
Other colonic pathology		
Hemorrhoids	5	20.8%
Diverticulosis	2	8.3%
Fissure	1	4.1%

Table 4: Histological Finding in Study Group

Histological finding	No.	Percentage
Fibrous obliteration of lamina propria	24	100%
Hypertrophy of muscularis mucosa	24	100%
Regenerative changes in crypts	24	100%
Granulation tissue	18	75%
Ulceration and erosion	12	50%
Neutrophilic infiltration	8	33.3%
Cystic changes of mucous gland	8	33.3%

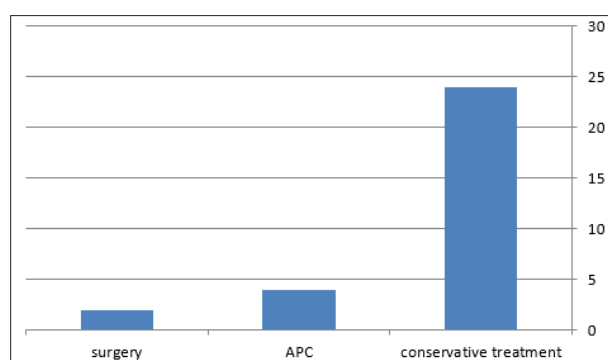


Figure 2: Types of Treatment

Table 5: Follow Up Study Group After Treatment

Follow up	No. of patients	Percentage
Symptom		
Disappear of symptom	6/18	33.3%
Improving of symptom	8/18	44.4%
No change in symptom	4/18	22.2%
Sigmoidoscopy		
Disappear of lesion	3/18	16.6%
Improving of lesion	13/18	72.2%
No change in endoscopy	2/18	11.1%
Histopathology		
Normal histopathology	2/18	11.1%
Improving histopathology	15/18	83.3%
No change in histopathology	1/18	5.5%

Conclusion

Young individuals with SRUS experience a chronic, benign condition that is frequently brought on by straining or unusual feces.

This study confirms that:

- 1) The word "SRUS" is deceptive when used to describe this illness.
- 2) Although the clinical picture can vary, the presence of constipation, rectal bleeding, and abdominal pain should prompt the doctor to make this diagnosis.
- 3) A single ulcer is the most frequent endoscopic finding; however, polyps and erythema can also be detected. The gold standard for determining the diagnosis of SRUS is histological investigation.
- 4) In the management of this illness, patient education and a conservative, tailored approach are crucial.
- 5) It seems premature to support any one type of treatment until more series have been published.

Recommendations

- 1) To further understand the natural history of various SRUS varieties, we advise greater research and a longer period of follow-up.
- 2) Defecography and anorectal physiological testing are research techniques that may shed more light on the condition's pathophysiology.

Declarations

Ethics approval and consent to participate statement: The study was approved by the Ethics Committee of the College of Medicine, University of Basrah, verbal and written informed consent had been taken from the patients enrolled in the study and in order to support privacy and confidentiality, I concealed the unique identifying information of people in the data gathering.

Consent to publication: Written informed consent had been taken from participant

Availability of data and material: the datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing Interests: Authors have declared that no competing interests exist.

Funding Statement: This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors

Authors' Contributions: the three authors contributed to the design and implementation of the research, to the analysis of the results and the writing of the manuscript.

Acknowledgments: The authors are grateful to all patients who agreed to participate in this study.

References

1. Cruveilhier J (1829) Ulcere chronique du rectum: Anatomie pathologique du corps humain, 2: 4.
2. Madigan MR, Morson BC (1969) Solitary ulcer of the rectum *Gut* 10: 871-881.
3. Sadeghi A, Biglari M, Forootan M, Adibi P (2019) Solitary Rectal Ulcer Syndrome: A Narrative Review. *Middle East Journal of Digestive Diseases* 11: 129-134.
4. Bouomrani S, Ourida S, Elleuch M, Lamloom I (2021) Solitary Rectal Ulcer Syndrome: An Exceptional Entity in the Elderly. *Gastroenterology Pancreatology and Hepatobiliary Disorders* 5: 01-02.
5. Blanco F, Frasson M, Flor-Lorente B, Minguez M, Esclapez P, et al. (2011) Solitary rectal ulcer. *European Journal of Gastroenterology & Hepatology* 23: 1262-1266.
6. Behera M, V K Dixit, S K Shukla, J K Ghosh, V B Abhilash, et al. (2015) Solitary rectal ulcer syndrome: clinical, endoscopic, histological and anorectal manometry findings in north Indian patients. *Tropical Gastroenterology* 36: 244-250.
7. Bulut T, Canbay E, Yamaner S, Gulluoglu M, Bugra D (2011) Solitary Rectal Ulcer Syndrome: Exploring Possible Management Options. *International Surgery* 96: 45-50.
8. Ong J, Lim K-H, Lim J-F, Eu K-W (2010) Solitary caecal ulcer syndrome: our experience with this benign condition. *Colorectal Disease* 13: 786-790.
9. Panis Y, Zeitoun JD, Siproudhis L, Meurette G, Lefevre J (2015) *Revue de presse. Côlon & Rectum* 9: 129-136.
10. Thakral N, Baikovitz H (2020) S1732 Solitary Rectal Ulcer Syndrome: Neither Solitary, nor Ulcerated, a Misnomer Indeed. *American Journal of Gastroenterology* 115: S894-S894.
11. Gouriou C, Chambaz M, Ropert A, Bouguen G, Desfourneaux V, et al. (2018) A systematic literature review on solitary rectal ulcer syndrome: is there a therapeutic consensus in 2018? *International Journal of Colorectal Disease* 33: 1647-1655.
12. AlSohaibani F, AlGhulayqah A, Abu-Farhan E, Almadi M, AlMana H (2016) Solitary rectal ulcer syndrome: A single-center case series. *Saudi Journal of Gastroenterology* 22: 456.
13. Felt-Bersma RJF (2020) Solitary rectal ulcer syndrome. *Current Opinion in Gastroenterology* 37: 59-65.
14. Zhu Q C, Rong-Rong Shen, Huan-Long Qin, Yu Wang (2014) Solitary rectal ulcer syndrome: Clinical features, pathophysiology, diagnosis and treatment strategies. *World Journal of Gastroenterology* 20: 738.
15. Abbasi A, Bhutto AR, Taj A, Aurangzaib, Akhtar Baloch, (2015) Solitary Rectal Ulcer Syndrome: Demographic, Clinical, Endoscopic and Histological Panorama. *J Coll Physicians Surg Pak* 25: 867-869.
16. Chiang JM, Changchien CR, Chen JR (2016) Solitary rectal ulcer syndrome: an endoscopic and histological presentation and literature review. *Int J Colorectal Dis*. 21: 348-356.
17. Marchal F, Bresler L, Brunaud L, Adler SC, Sebbag H, et al. (2011) Solitary rectal ulcer syndrome: a series of 13 patients operated with a mean follow-up of 4.5 years. *International Journal of Colorectal Disease* 16: 228-233.
18. Shubbar A H, AL-Aukashi R J chronic colitis: clinical, endoscopic and histopathological evaluation in 130 Iraqi patients (unpublished thesis).
19. Dehghani SM, Haghighat M, Imanieh MH, Geramizadeh B (2018) Solitary rectal ulcer syndrome in children: a prospective study of cases from southern Iran. *European Journal of Gastroenterology & Hepatology* 20: 93-95.
20. Torrijo Gómez I, Balciscueta Coltell Z, Sanjuan Jiménez J, Uribe Quintana N (2018) Solitary Rectal Ulcer in a Patient with Rectal Prolapse. *Cirugía Española (English Edition)* 96: 234.
21. Ertem D, Acar Y, Karaa EK, Pehlivanoglu E (2002) A Rare and Often Unrecognized Cause of Hematochezia and Tenesmus in Childhood: Solitary Rectal Ulcer Syndrome. *Pediatrics* 110: e79-e79.
22. Forootan M, Darvishi M (2018) Solitary rectal ulcer syndrome. *Medicine* 97: e0565.
23. Yagnik V (2011) Re: Solitary 'rectal' ulcer syndrome in the sigmoid colon. *Colorectal Disease* 13: 344-344.
24. van den Brandt-Grädel V, Huibregtse K, Tytgat GNJ (1984) Treatment of solitary rectal ulcer syndrome with high-fiber diet and abstention of straining at defecation. *Digestive Diseases and Sciences* 29: 1005-1008.
25. Malouf AJ, Vaizey CJ, Kamm MA (2011) Results of behavioral treatment (biofeedback) for solitary rectal ulcer syndrome. *Diseases of the Colon & Rectum* 44: 72-76.
26. Edden Y, Shih SS, Wexner SD (2009) Solitary Rectal Ulcer Syndrome and Stercoral Ulcers. *Gastroenterology Clinics of North America* 38: 541-545.
27. da Fonseca LM, de Lemos Souza F, Arantes V, da Silva RG (2010) Giant refractory solitary rectal ulcer syndrome treated with topical sucralfate. *International Journal of Colorectal Disease* 25: 1025-1026.
28. Gagliardi M, Sica M, Oliviero G, Maurano A, Zulli C (2021) Endoscopic Application of Purastat® in the Treatment of Solitary Rectal Ulcer Syndrome. *Journal of Gastrointestinal and Liver Diseases*.

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