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Frequency of solitary rectal ulcer syndrome amongst patients with lower gastrointestinal bleeding

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***Abstract*---**Objective: To assess the frequency of lower gastrointestinal bleeding in patients with solitary rectal ulcer syndrome. Materials and method: This descriptive cross-sectional study was conducted at a single center in order to find the frequency of lower GI bleeding in patients with solitary rectal ulcer syndrome from January 2022 to March 2023 at the Department of Gastroenterology, Qazi Hussain ahmad medical complex Nowshera after approval from the institutional review board of the hospital. A total of 176 participants of both genders were selected through a convenient sampling technique and the data was collected through a well-structured questionnaire, and through a physical examination, in addition to endoscopic and histopathology results. All the data was analyzed by using the latest version SPSS 24. Results: A total of 176 of the participants were selected with an age range from 20- 70 years with a mean age of 35.23 years and a standard deviation of 13.13. The age ranges from 20 to 70 years. Moreover, 98 (55.68 %) of them were male and 78 (44.31 %) of them were female, however, the male-to-female ratio was 1.25:1. only 15 (8.52 %) of the participants had solitary rectal ulcers, whereas 161 (91.47 %) of them tested negative for solitary rectal ulcers. SRUS was more frequent in males were 11 (73.33 %). Per rectal bleeding was common in all 15 individuals having SRUS, and 73. 33 % of the participants had constipation and fibromuscular annihilation was

found in all the patients. Practical implication: The results of the research might aid medical professionals in promptly diagnosing and treating SRUS in individuals experiencing rectal bleeding. Conclusion: In the current study we concluded that Patients who reported with lower gastrointestinal bleeding had a significant incidence of Solitary Rectal Ulcer Syndrome (SRUS). Clinicians must anticipate the likelihood of SRUS and establish an early diagnosis for appropriate care in order to enhance patients' prognosis and quality of life.

***Keywords*---**solitary rectal ulcer syndrome, endoscopy, histopathology, per rectal bleeding.

Introduction

Solitary rectal ulcer syndrome (SRUS) is uncommon presently, but it is a long-term medical condition [1]. The diagnostic decision was made on the results of the histopathological characteristics and clinically endoscopic findings of the SRUS [2]. As a result, the ordinary progression of SRUS, being a long-term illness, is marked by phases of recovery as well as recurrence. As consequently, the medical management for SRUS is still difficult. According to an up-to-date survey of scientific research, treatment options exhibit uncertain with non-perennial effectiveness [3]. Manifestations of SRUS are mostly combined with the changes in the mucosa that is associated with the external prolapse of the rectum shown in the previous papers, regardless of the fact that SRUS and prolapse of the rectum are not associated with similar pathophysiology [4]. There are, in fact, numerous surgical options available as well as treatments that are not surgical having unclear pathophysiological evidence [3]. Solitary rectal ulcer syndrome (SRUS) affects approximately hundred thousand (100000) individuals every year. The exact pathophysiology remains to be understood, nevertheless, it is presumed that the condition is associated with a condition called localized ischemia ultimately eventually results in ulceration. Tenesmus (urge to defecate), protrusion of the rectum, constipation, as well as rectal bleeding represent a few of the indicators that could happen. Prior to the diagnosis, approximately 26% of individuals show no symptoms at all [5]. Although SRUS might impact younger individuals, it is most commonly found in individuals who are in their third and fourth decade of life (30-40 years of age) [6]. Drawing solid findings is really tough. Minimal has been discovered regarding the mechanics of SRUS, which leads to the major challenges involved in managing care. A lack of a shortage of scientific information regarding the anorectal functioning determined by anorectal manometry measurements as well as defecography [7]. In addition, while the word "ulcer" has been utilized when describing this disease, its clinical manifestations might vary, having isolated ulcers as well as rectal wall inflammation, and even polypoid alterations [8]. The determination of diagnosis might be challenging to choose, particularly evidence from histology must be presented to rule out malignancy, conditions like ischemic colitis, along with prolonged inflammatory bowel disorder [9]. The medical treatment of Solitary rectal ulcer syndrome (SRUS) is still difficult and required an approach that is multidisciplinary. The only purpose of enhancing the complaints as well as the quality lifestyle of the individual who is being treated [10]. Rectal bleeding is an ordinary manifestation,

exhibiting an incidence in adulthood (14% – 19%). The underlying reason associated with these bleeds is generally non-cancerous causes, for example, hemorrhoids, whereas some are associated with severe colorectal diseases, such as malignancies of the colon, a condition known as inflammatory bowel disease, along with adenomatous polyps for short time [11]. A study conducted in Pakistan that hemorrhoids, as well as colitis with ulceration, have been identified as being among the leading causes of bleeding through the rectum, subsequently followed by single rectal ulcers with tumors. Crohn's disease conditions like colitis, polyps, and diverticular conditions were cited as less prevalent causes of bleeding from the rectum [12]. A further research study in Karachi concluded that hemorrhoids were responsible for 38.2% of lower GI bleed cases whereas polyps were responsible for 11.3% of lower GI bleed caused among individuals who had a sigmoidoscopy [13]. Biofeedback therapy (BFT) that emphasizes improving bowel control includes strategies that involve spending time while using the bathroom, integrating the pelvic region and muscles of the abdomen for successful the straining process, additional utilization of Valsalva maneuvers, and so on, have been associated with improving healing of ulcers by as much as 75% [14]. The approach used for treatment is generally progressive and interdisciplinary, progressing with conservative to aggressive choices such as emotional, behavioral in nature, physiological in nature, pharmacological, as well as surgical procedures [15]. The results of the research might aid medical professionals in promptly diagnosing and treating SRUS in individuals experiencing rectal bleeding. This is especially important since the residents haven't participated in any previous studies on the topic. Early identification improves the quality of life for those afflicted by the condition by reducing the burden of related morbidities and additional healthcare costs.

Objective

To assess the frequency of the lower gastrointestinal bleeding in the patients with solitary rectal ulcer syndrome.

Materials and Method

A descriptive cross-sectional study was conducted at a single center in order to find the frequency of lower GI bleeding in patients with solitary rectal ulcer syndrome from January 2022 to March 2023 at the Department of Gastroenterology, Qazi Hussain Ahmad medical complex Nowshera after approval from the institutional review board of the hospital. A total of 176 participants of both genders were selected through a convenient sampling technique and the age of the participants was 20- 70 years with a mean age of 35.23 years and a standard deviation of 13.13. All those participants who had lower GI bleeding for one-week minimum time and those who were willing to participate in the study were included. Patients with acute myocardial infarctions, bleeding disorders, respiratory diseases, a history of perforation, and other chronic diseases were excluded from the study. The participants were provided with proper guidance and information regarding the study. Informed consent was obtained from each participant who was willing, in addition, they were assured that their privacy and confidentiality will be maintained. The data was collected through a well-structured questionnaire, and through a physical examination, in addition to

endoscopic and histopathology results. All the data were analyzed properly by using the latest version of SPSS 24.

Results

The results of the study are presented in the following tables which are easily understandable. Table # 01 illustrates the sociodemographic characteristics of the participants. A total of 176 of the participants were selected with an age range from 20- 70 years with a mean age of 35.23 years and a standard deviation of 13.13. The age ranges from 20 to 70 years. 45.44 % of the participants were from 51 to 70 years of age, while 21.02 % of them were from 41 to 51 years of age. Moreover, 98 (55.68 %) of them were male and 78 (44.31 %) of them were female, however, the male-to-female ratio was 1.25:1. The length of their symptoms were from 1-12 weeks, in addition, 55.1 % of them had length of duration from 7 to 12 weeks and 24.43 % of them had 4 to 6 weeks. Furthermore, only 15 (8.52 %) of the participants had solitary rectal ulcers, whereas 161 (91.47 %) of them tested negative for solitary rectal ulcers.

Table # 01 Socio-demographic Characteristics of the Individuals

Age (years)	Number	Percentage
20-30	27	15.34 %
31-40	32	18.18 %
41-50	37	21.02 %
51-60	41	23.29 %
61-70	39	22.15 %
Gender		
Male	98	55.68 %
Female	78	44.31 %
Length of symptoms		
1-3 weeks	36	20.45 %
4-6 weeks	43	24.43 %
7-9 weeks	40	22.72 %
10-12 weeks	57	32. 38 %
Solitary ulcer (rectal)		
Yes	15	8.52 %
No	161	91. 47 %

Table 2 summarized the statics of Solitary Rectal Ulcer Syndrome in accordance with the demographic characteristics of the participants, and it was more common in the age group of 31 to 40 years which was 6 (40 %), however, 33.33 % of the individuals having age from 51 to 70 years. SRUS was more frequent in males that were 11 (73.33 %), and 4(26.66 %) of the female have SRUS. 7 (46.66 %) of them have a length duration was from 10-12 weeks, while 26.66 % of them have 7-9 weeks of duration of their symptoms.

Table # 2 Statics of Solitary Rectal Ulcer Syndrome in accordance with demographic characteristics

Age (years)	Number	Percentage
20-30	1	6.66 %
31-40	6	40 %
41-50	3	20 %
51-60	2	13.33 %
61-70	3	20 %
Total	15	100 %
Gender		
Male	11	73. 33 %
Female	4	26. 66 %
Total	15	100 %
Length of symptoms		
1-3 weeks	1	13.33 %
4-6 weeks	3	20 %
7-9 weeks	4	26.66 %
10-12 weeks	7	46. 66 %
Total	15	100 %

Table 3 highlights the various symptoms of individuals with SRUS symptoms. Per rectal bleeding was common in all 15 individuals having SRUS, and 73. 33 % of the participants had constipation in addition to rectal bleeding. Consequently, 66.66 % and 53.33 % of the patients experienced abdominal pain and straining respectively. 46.66 % of them experienced mucus discharge, While 26. 66 % of them developed urgency and 26. 66 % alteration in their bowel habits. In addition, 80 % of the participants had developed anemia, which 3 (25 %) of them had mild anemia (8-12 g/dl) and 7 (58.33 %) of the individuals were moderately anemic, and 2 (16.66 %) of the participants were severely anemic (less than 6 g/dl).

Table # 03 Symptoms of patients with SRUS

Symptom	Number	Percentage
Per Rectal Bleed	15	100 %
Constipation	11	73.33 %
Diarrhea	2	13.33 %
Abdominal pain	10	66.66 %
Straining	8	53.33 %
Prolapse (rectal)	4	26.66 %
Incontinence	2	13.33 %
Mucus discharge	7	46.66 %
Urgency	4	26.66 %
Pain in perianal area	5	31.25 %
Tenesmus	3	20 %
Alteration in bowel habits	4	26.66 %
weight loss in 5 months	3	20 %

Anemia	12	80 %
Division of anemia in accordance with Hb level		
Mild 3 (25 %)		8-12 g/dl
Moderate 7 (58.33 %)		6-8 g/dl
Severe 2 (16.66 %)		less than 6 g/dl

Table 4 indicates the endoscopic findings while Table 5 highlights the histopathological results of the patients having SRUS. Anterior lesions 11 (73. 33 % and solitary lesions 5 (66.66 %) were common findings in the endoscopy. Moreover, 26.66 % of the patients had hemorrhoids and 33.33 % of them developed multiple lesions. Additionally, fibromuscular annihilation was found in all the patients having SRUS through histopathological reports, while superficial mucosal ulcer (53.33 %) was the second most common finding in the histopathology report. Mucosal gland deformity and deviation of crypts each was 26. 66 % developed by the affected individuals.

Table # 04 Findings of Endoscopy in the Patients of SRUS

Anterior lesions	11	73.33 %
Posterior lesions	3	20 %
Latera lesions	2	13.33 %
Solitary lesions	10	66.66 %
Multiple lesions	5	33.33 %
Hemorrhoids	4	26.66 %
Ulcerative colitis	2	13. 33 %
Encircling lesions	1	6.66 %

Table # 05 Histopathological results of SRUS patients

Deformity of mucosa gland	4	26.66 %	P <0.05
Ulceration of superficial mucosa	8	53.33 %	P <0.05
Fibromuscular annihilation	15	100 %	P <0.001
Inflammation	9	60 %	P <0.001
Deviation of crypts	4	26.66 %	P <0.05
Hyperplasia of crypts and diamond shape	3	20 %	P <0.05

Discussion

Solitary ulcer syndrome is a serious and life-threatening condition with multiple signs and symptoms. SRUS has multiple mixed symptoms initially like abdominal pain, altered bowel habits, rectal bleeding, and weight loss over time, in addition, it can be life-threatening if not properly, managed on time. Due to continuous rectal bleeding, a patient may develop severe anemia which can endanger the life of the individual. In the current study, a total of 176 of the participants were selected with an age range from 20- 70 years with a mean age of 35.23 years and

a standard deviation of 13.13. The age ranges from 20 to 70 years. 45.44 % of the participants were from 51 to 70 years of age, while 21.02 % of them were from 41 to 51 years of age. Moreover, 98 (55.68 %) of them were male and 78 (44.31 %) of them were female, however, the male-to-female ratio was 1.25:1. In the current study, a total of 8.52 % of the participants had solitary rectal ulcer syndrome with gastrointestinal bleeding, and most predominance in males 11 (73.33 %) and females 4 (26.66 %), while Zhu QC et all concluded higher proportion (20 %) of SRUS, but more predominance in female patients [16]. However, another conducted by Ejaz Z et al concluded that 6.6 % of the patients had a solitary ulcer rectal syndrome with lower GI bleeding and was more prevalent in males which was similar to the current study [17]. In the present study, 80 % of the participants had developed anemia, which 3 (25 %) of them had mild anemia (8-12 g/dl) and 7 (58.33 %) of the individuals were moderately anemic, and 2 (16.66 %) of the participants were severely anemic (less than 6 g/dl). While another study conducted by Abusharifah O et al (81 %) [18], Anjum MN et al (76.19 %) [19], and Dehghani SM et al (74. 5 %) [20] with more prevalence of SRUS in the male as compared to females opposite to current stud, therefore a study over large sample size and long duration needed. Additionally, fibromuscular annihilation and per rectal bleeding (100 %) were found in all the patients having SRUS through histopathological reports. 73. 33 % of the participants had constipation in addition to rectal bleeding. Consequently, 66.66 % and 53.33 % of the patients experienced abdominal pain and straining respectively. 46.66 % of them experienced mucus discharge, While 26. 66 % of them developed urgency and 26. 66 % alteration in their bowel habits similar findings as concluded by Abid S et al also concluded that 82 % of them had developed PR bleeding, 49 % had experienced abdominal pain and 78 % had lesions (ulcerative) [21], while a study conducted by Sadeghi A et al also concluded the similar findings [15]. Gouriou C. et al found that 78 % of the males and 22 % of the females had solitary ulcers, according to them pelvic floor muscles disorder was common in females [10]. Nkurunziza L et al found that 73.1 % of the participants had mucus discharge, 38.5 % had constipation, and 34.6 % of the individuals had experienced rectal prolapse [22]. The strength of the current study was that this study was the first one conducted in our setting. The major drawback was this study was conducted in a single centre with small sample size.

Conclusion

In the current study we concluded that Patients who reported with lower gastrointestinal bleeding had a significant incidence of Solitary Rectal Ulcer Syndrome (SRUS). Clinicians must anticipate the likelihood of SRUS and establish an early diagnosis for appropriate care in order to enhance patients' prognosis and quality of life.

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