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WINDOW COLOSTOMY TECHNIQUE CONGENITAL SHORT COLON MANAGEMENT

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ABSTRACT

Background: ARM (ano-rectal malformation) is associated with congenital short colon (CSC), an uncommon anomaly in which the shortened colon exhibits a pouch-like dilatation. The clinical and anatomical characteristics of CSC are clearly described by prior research, but treatment is still challenging and contentious.

Aim: Assessing the effectiveness of window colostomy as a main diversion surgery in people with congenital short colon was the goal of the current investigation.

Methods: During the specified research period during which window colostomy was performed, the study evaluated every CSC patient admitted to the Institute. A window colostomy was done on 250 of the 274 CSC individuals who were evaluated retrospectively based on the data records concerning complications related to window colostomy and treatment done. 10 patients had mortality before surgery. Transverse colostomy was done in 14 subjects with incomplete CSC.

Results: The study included 172 participants who had window colostomy, experienced all phases of care, including ileostomy, coloplasty, and, finally, ileoplasty closure. There are a few upsetting side effects from the procedure, such as an overall mortality rate of 11% (n=28), significant periostomy excoriation in 36 subjects, significant pouch prolapse in 12 subjects that required revision, minor pouch prolapse in 38 subjects, and window colostomy stenosis in 44 subjects that required dilatation. When a congenital short colon has an initial window colostomy, it may lead to incomplete fecal diversion, where the pouch does not fully decompress, and issues are associated with the stoma itself.

Conclusion: Nonetheless, the treatment is quick, simple, and life-saving. It gives enough time for weight growth and prepares the patient for second stage surgery, which eventually has no effect on the result for patients with congenitally small colons.

Keywords: Anorectal Malformations, colostomy, Congenital Short Colon, CSC, Window Colostomy

INTRODUCTION

Anorectal agenesis is associated with congenital short colon (CSC), a rare and uncommon syndrome in which the shortened colon dilates like a pouch and is also associated with anorectal abnormalities. With about 90% of cases occurring in India alone, CSC is frequently observed in Indian subjects and is more prevalent in North Indian subjects as well as in nearby countries. As awareness grows, there is a lack of data from the literature worldwide. Previous literature provides a clear explanation of CSC and its diagnostic aspects.[1]

The surgical treatment of CSC is still debatable and difficult. Achieving accessible colon length for storage and absorption as well as fecal matter thrusting forward with enough continence is the primary goal of treating CSC. Due to the high mortality and complication rate among CSC patients, single-stage surgery is currently not recommended.[2]

Many methods for the initial diversion in staged surgery are described in the literature. Among these procedures are proximal ileostomy in full CSC, end colostomy following fistula division and pouch excision in partial congenital short colon, and end coloplasty and colostomy in complete congenital short colon. Despite being originally described in the literature as a diversion procedure, window colostomy was later dropped by several authors because of the high reported rate of complications. The method of choice for patients having initial diversion in India is still window colostomy, often known as temporizing WC.[3] It entails making a small stoma on the anterior pouch's surface without severing the urethra and rectum's connection.

The treatment requires less time, saves lives, and requires less anesthesia. Four Assessing the effectiveness of window colostomy as a main diversion surgery in people with congenital short colon was the goal of the current investigation.

MATERIALS AND METHODS

Assessing the effectiveness of window colostomy as a main diversion surgery in people with congenital short colon was the goal of the current investigation. The Institute's Department of General Surgery provided the research participants. Prior to research participation, informed permission was obtained verbally and in writing from all subjects and school officials.

Evaluations were conducted on all CSC patients admitted to the Institute during the designated study period when window colostomy was done. 250 of the 274 CSC participants had window colostomy surgeries, which were evaluated retrospectively using data records pertaining to window colostomy problems and the treatments administered. Twelve participants were not included in the research because they had colostomies at another facility. Following a window colostomy, 172 participants in the research experienced all phases of care, including ileostomy, coloplasty, and, finally, ileoplasty closure. There were not many upsetting side effects associated with the surgery. The study's overall mortality rate was 11%, meaning that 28 participants passed away. Following decisive operations, 172 individuals were evaluated for complications and effectiveness.

All of the patients had sufficient preoperative resuscitation, and all of them underwent nasogastric compression in addition to starting broad-spectrum antibiotics. All of the participants had plain erect abdomen X-rays performed as part of their examinations, with the exception of 38 subjects who had small colon perforations. Blood glucose, serum creatinine, and hemograms were routinely performed on each individual. All of the patients had three stages of surgical care: ileostomy closure, proximal ileostomy and colostomy, and main window colostomy.

When using the window colostomy procedure, a little pouch stoma is formed on the abdomen. The procedure is performed at the intersection of the medial two thirds and lateral one third of the left spino-umblical line, which is known as Mc Burney's point.[4]

Following peritoneal opening, the pouch is located and the anterior colonic pouch surface is opened without ligating the fistulous connection. By making the window colostomy as narrow as feasible, pouch prolapse is avoided later. ANOVA, the chi-square test, the student's t-test, Fisher's exact test, the Mann Whitney U test, and SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk, NY, USA) were used to statistically analyze the collected data. A p-value of less than 0.05 was regarded as the significance level.

RESULTS

The purpose of the current study was to evaluate window colostomy's effectiveness as a main diversion technique for individuals with congenital short colons. Every CSC patient admitted to the Institute throughout the specified study period during which window colostomy was performed was evaluated for the study.

A window colostomy was performed on 250 of the 274 CSC individuals who were evaluated retrospectively based on data records pertaining to window colostomy problems and treatment outcomes. The study monitored 172 patients who had window colostomy and experienced all phases of care, including ileostomy, coloplasty, and, finally, ileoplasty closure. Only a few upsetting side effects were associated with the surgery.

Out of the 250 individuals who had window colostomy treatment for congenital short colon, 202 were men and 48 were women. Twenty-eight patients passed away after window colostomy because to poor general health after related septicemia and delayed presentation. 44 patients had to have their window colostomy dilated since it was linked to stenosis.

The study's findings demonstrated that 38 participants with varying degrees of pouch prolapse needed extra attention and were treated conservatively. In 12 cases of severe pouch prolapse with mucosal hemorrhage and subsequent inability to gain weight, the surgery was connected. Under anesthesia, circumferential suturing was used to handle these patients conservatively. Additionally, zinc oxide powder was recommended for use in coconut oil for 36 participants who had significant peri-ostomy excoriation.

All of the individuals had modest erythema, it was also seen. Ten individuals showed signs of enterocolitis following infection and stasis. These subjects were treated with pouch washing and antibiotics. The overall death rate for the 28 research participants was 11.2%.

Additional issues associated with window colostomy and its management include surgical excoriation in 20.9% (n=36) of the subjects treated with zinc oxide and coconut oil, massive prolapse in 6.9% (n=12) of the subjects treated with reduction and circumferential suturing, massive prolapse in 6.95 (n=12) of the subjects treated with reduction and circumferential suturing, prolapse in 22% (n=38) of the cases treated conservatively, and stenosis in 25.5% (n=44) of the subjects treated with dilatation (Table 1).

DISCUSSION

In this study, 274 CSC participants were evaluated, and 250 of those subjects had window colostomy in a retrospective evaluation based on data records pertaining to treatment outcomes and window colostomy problems. 172 participants in the research were monitored after window colostomy and experienced all phases of care, including window colostomy, ileostomy, coloplasty, and ileoplasty closure.

A small number of upsetting side effects were associated with the operation. These results were similar to those from earlier research by Mathur P et al. (2009) and Bhat NA et al. (2007), in which the authors evaluated participants with CSC and obtained findings similar to the current study.

There were 202 men and 48 women among the 250 participants who had window colostomy for congenital small colon, according to the study's findings. After window colostomy, 28 individuals passed away due to poor general health, related septicemia, and delayed presentation. For 44 individuals, the window colostomy necessitated dilatations and was linked to stenosis. These outcomes aligned with the research conducted by Gangopadhyay AN et al. in 2005 and Wakhlu A et al. in 2009 where The findings of the current study were similar to the demographics and illness features of CSC that the authors reported in their research.

It was visible. It was observed that 38 patients with some degree of pouch prolapse needed extra attention and were treated conservatively. Twelve occurrences of severe pouch prolapse accompanied by mucosal hemorrhage and subsequent weight loss were connected to the surgery. Under anesthesia, circumferential suturing was used as a conservative management strategy for these participants. Additionally, 36 patients who had significant peri-ostomy excoriation were recommended to apply zinc oxide powder to their coconut oil. These results concurred with those of Pavai A et al. (2009) and Agarwal S et al. (2017) where results were similar to the present study were also reported by the authors in their respective studies.

The findings of the study also revealed that all of the participants had moderate erythema. Ten of the participants had indications of enterocolitis following infection and stasis. Using pouch washes and antibiotics, these individuals were treated. The study's overall death rate was 11.2% for the 28 participants. Additional complications associated with window colostomy and its management include: surgical excoriation in 20.9% (n=36) of subjects treated with zinc oxide and coconut oil; massive prolapse in 6.9% (n=12) of subjects treated with reduction and circumferential suturing; massive prolapse in 6.95 (n=12) of subjects treated with reduction and circumferential suturing; prolapse in 22% (n=38) of cases treated conservatively; and stenosis in 25.5% (n=44) of subjects treated conservatively.

These outcomes were consistent with the findings of two previous studies, Gritlaharey RK et al. (2011) and Chadha R et al. (2017), where the authors' reports of window colostomy problems were similar to the current study's findings.

CONCLUSION,

Given the study's limitations, the current study comes to the conclusion that initial window colostomy creation in congenital short colons can lead to incomplete fecal diversion, in which the pouch fails to adequately decompress and difficulties are associated with the stoma itself. In patients with congenitally short colons, the treatment is brief, simple, and life-saving. It also gives enough time for weight increase and preparation for second stage surgery, which progressively has no effect on the end results.

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S. No	Complications	Number (n)	Percentage (%)	Treatment
1.	**Mortality**	28	11.2	-
2.	**Surgical excoriation**	36	20.9	Zinc oxide and coconut oil application
3.	**Massive prolapse**	12	6.9	Reduction and circumferential suturing
4.	**Prolapse**	38	22	Conservative
5.	**Stenosis**	44	25.5	Dilatation

Table 1: Complications related with window colostomy in study subjects