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ORIGINAL RESEARCH

Clinical Outcomes of Transanal Drainage Tube Placement Following Surgical Repair for Chronic III-IV Perineal Tears

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Purpose: To evaluate the outcome and safety of transanal drainage tube (TDT) placement following surgical repair of chronic third- and fourth-degree perineal tears.

Patients and Methods: A retrospective cohort study was conducted at Peking Union Medical College Hospital (2016–2024), including 31 patients with chronic perineal tears who underwent surgical repair. Patients were stratified into success (n=23) and failure (n=8) groups. Surgical failure was defined as persistence of fecal incontinence at six months postoperatively. Data included demographics, surgical details, TDT use, Wexner, and SF-12 scores.

Results: The procedure demonstrated an overall success rate of 74.2% (23/31). Postoperative SF-12 and Wexner scores improved significantly in both the success and failure groups ($p < 0.05$). The success group had longer tube retention (9[7–11.5] vs 7[6–7] days, p=0.03). Further analysis revealed that prolonged drainage duration beyond 8 days was associated with improved success rates. Patients in the TDT group showed significantly greater improvement in Wexner scores (11.42 ± 3.13 vs 7.67 ± 3.37, $p = 0.004$). No major TDT-related complications occurred.

Conclusion: Transanal drainage tube placement may enhance anal sphincter function when used at the time of anal sphincteroplasty. Maintaining TDT for more than 8 days is associated with higher success rate. Both successful and unsuccessful repairs lead to significant improvements in quality of life and fecal incontinence symptoms.

Plain Language Summary: TDT after surgical repair for chronic perineal tears may improve anal function and quality of life; retaining TDT over 8 days is associated with higher success rate without major complications.

Keywords: chronic perineal tears, fecal incontinence, SF-12 score, transanal drainage tube, Wexner score

Introduction

Perineal tears occur in up to 90% of primiparous women and approximately 70% of multiparous women following vaginal delivery.[1] These injuries frequently cause substantial morbidity, including perineal pain, dyspareunia, pelvic floor dysfunction, and psychological disorders such as postpartum depression and anxiety.[2] These complications significantly impact maternal health, both physically and psychologically. Among these injuries, obstetric anal sphincter injuries (OASI) are observed in 4–11% of deliveries and are strongly associated with an increased risk of fecal and flatal incontinence.[3] Previous studies reported that 29–53% of OASI patients experience flatal incontinence and 5–10% develop fecal incontinence within six months postpartum, both of which can profoundly impair quality of life, leading

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to social withdrawal and considerable daily inconvenience.[4] Timely recognition and primary repair of OASI is therefore crucial, as neglected sphincter injuries frequently evolve into chronic perineal tears with persistent incontinence and lasting adverse effects on women's physical and emotional health.

The current evidence on perineal tear repair is predominantly derived from studies of fresh injuries, whereas research focusing on chronic perineal tears remains limited.[5] In resource-limited settings, inadequate primary repair or unrecognized OASI may result in chronic perineal tears. Kayondo et al defined "old" (chronic) obstetric perineal tears as ≥3 months after injury or primary repair in a prospective cohort study from Uganda,[6] which is consistent with the fundamental principles of wound healing.[7] Patients with chronic tears experience a substantial disease burden: both chronic tears cause debilitating fecal incontinence and significant psychological distress, highlighting their distinct clinical impact. Chronic perineal tears are also commonly characterized by scar hyperplasia with reduced local vascularity, which complicates dissection during surgery and constrains clinical outcomes.

Postoperative management focuses on two key objectives: minimizing fecal contamination of the wound and reducing intraluminal pressure during healing. Some guidelines recommend the use of laxatives and stool softeners postoperatively to avoid the passage of hard stool.[3,8] This objective aligns with the approach of placing a transanal drainage tube (TDT) following surgery for rectal cancer and pelvic exenteration for gynecologic cancers.[9–13] Building on this rationale, we pioneered TDT application following surgical repair for chronic perineal tears at Peking Union Medical College Hospital, a tertiary referral center. To our knowledge, no previous studies have systematically evaluated this approach. Therefore, this study investigates the clinical outcomes of TDT placement after surgical repair of chronic perineal tears, providing appropriate insertion time and including TDT-related complications. We aim to provide new evidence to guide both surgical technique and postoperative management. We anticipate that these findings could have an influence across diverse settings: in resource-limited environments where chronic tears are common, a TDT may improve outcomes, while in tertiary care centers our results could help refine postoperative protocols to optimize recovery.

Materials and Methods

Population

In this retrospective cohort study, we identified all patients with chronic perineal tears who underwent surgical repair at Peking Union Medical College Hospital (PUMCH) from October 2016 to December 2024. The flow chart is shown in Figure 1. All the patients were presented with the chief complaint of fecal or flatal incontinence postpartum. Chronic perineal tears is defined as a laceration persisting ≥3 months after childbirth, irrespective of whether an immediate primary repair was undertaken upon delivery or no repair was performed. Inclusion criteria comprised: (1) patients diagnosed with chronic perineal tears according to the electronic health records; (2) received surgical repair at our center. Exclusion criteria included: (1) concurrent pelvic floor disorders were identified, including rectovaginal fistula and urinary incontinence; (2) patients diagnosed with autoimmune diseases or diabetes mellitus; (3) medical record or follow-up information was unavailable.

Data extracted from the hospital information system included age at childbirth and current admittance, BMI, gravidity, parity, previous repair times, mode of delivery, neonatal birth weight, endoanal ultrasound data, method of repair, operation time, use of TDT, duration of TDT placement, postoperative complications, inpatient stay, preoperative SF-12 score and Wexner score.

Continence and QOL Questionnaire

At our center, routine preoperative and postoperative functional assessments are conducted for all patients with chronic perineal tears to evaluate the severity of the disease. Before surgery and six months postoperatively, patients undergo standardized evaluation of anal continence and quality of life. These assessments include the Wexner score and the SF-12(v2) questionnaire. Both evaluations were conducted by trained clinical staff, who were blinded to neither the clinical information nor the use of TDT.

The Wexner score was selected for evaluation due to its simplicity and widespread validation. It is also a commonly used scoring system in the literature on perineal tears, enabling comparison across studies. It quantifies the frequency and impact

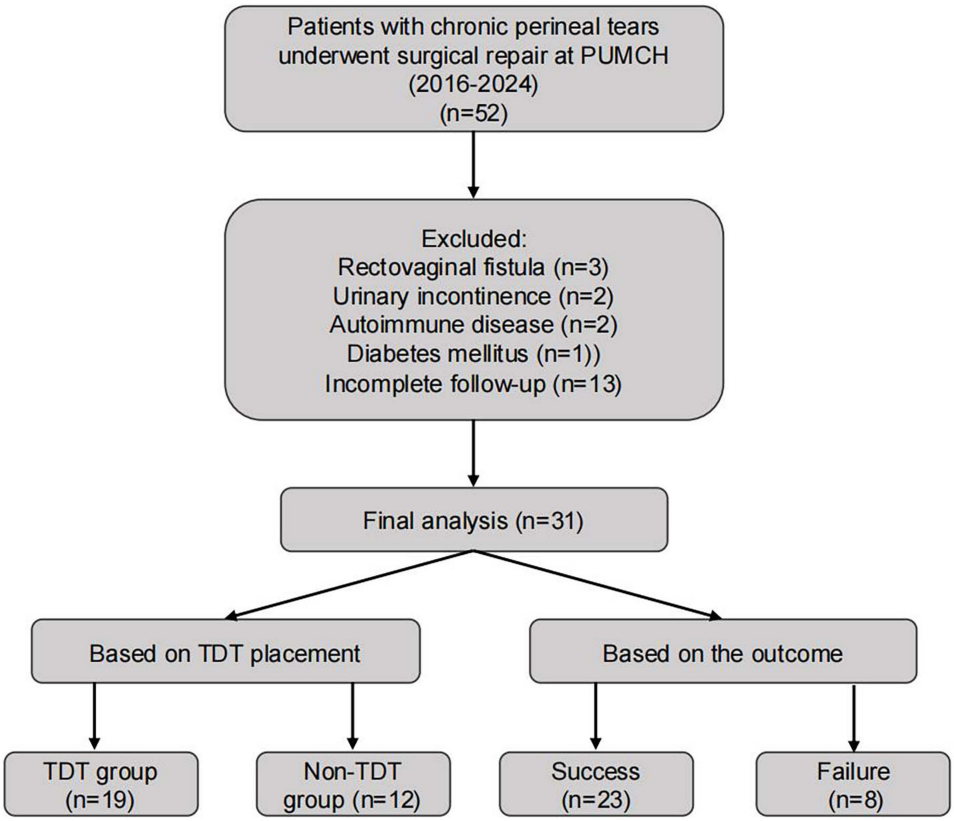

Figure 1 Flow chart displaying the inclusion of patients. A total of 31 women who underwent surgical repair for chronic perineal tears were enrolled for final analysis. And they were stratified based on TDT placement or clinical outcome.

of fecal incontinence through five core domains: incontinence to gas, liquid, and solid stool, lifestyle alteration, and the need for wearing pads. Each domain is scored on a 0–4 scale, resulting in a total score ranging from 0 (perfect continence) to 20 (complete incontinence).[14] In aspects of quality of life, we chose SF-12(v2) also for its wide use and solid validation. The score can provide a concise assessment of both physical and mental health dimensions through the Physical Component Summary (PCS) and Mental Component Summary (MCS) scores, allowing a thorough assessment of the patients' quality of life.[15] We also prespecified minimal clinically important difference (MCID) to aid the interpretation of patient-reported outcomes. For the Wexner score, we defined MCID as a reduction of ≥3 points, derived from a prior anchor-based analysis in fecal incontinence.[16] For the SF-12 score, based on anchor-based estimates from a multicenter cohort, achievement of the MCID was defined as an increase of ≥3.29 points in the PCS and ≥3.77 points in the MCS.[17]

Preoperative data were obtained in person, and postoperative data were obtained during outpatient follow-up or via structured telephone interviews. The SF-12 score improvement was defined as postoperative scores minus preoperative scores, while the Wexner score was compared using preoperative scores minus postoperative scores.

Laceration Assessment

In our center, endoanal ultrasound is part of the routine pre-operative work-up. The degree of perineal tears was determined based on both physical examination by an experienced urogynecologist and preoperative ultrasonography during the current admission. The ultrasound doctor also detected the length and angle of the defect of the external anal sphincter (EAS). Beginning in October 2018, our institution implemented a routine protocol for transanal drainage tube (TDT) placement in all patients undergoing surgical repair for chronic perineal tears. We defined surgical success as the complete absence of fecal incontinence at six months postoperatively. Patients with any persistent fecal incontinence at

six months were classified as surgical failure. Based on these principles, patients were stratified into TDT and non-TDT groups, as well as the success and failure groups.

Perioperative Protocol

At our center, all patients underwent inpatient treatment. Upon admission, standard bowel preparation is performed. Repairs are conducted in the operating room under general anesthesia. Before incision, a Foley catheter is inserted, and prophylactic intravenous antibiotics are administered. After surgery begins, the two ends of EAS are carefully identified and grasped with Allis forceps. Scarred rectal mucosa and perineal skin are excised to freshen the edges, the rectal mucosa is closed with 3-0 absorbable sutures, and the internal anal sphincter is repaired with 3-0 delayed-absorbable interrupted mattress sutures. EAS repair is individualized: for partial EAS tears, we perform an end-to-end suture. While for complete EAS tears, the choice between overlapping and end-to-end approximation is determined by defect length and tissue quality as assessed by experienced urogynecologists; when extensive scar excision leaves limited viable tissue, end-to-end repair is preferred. Otherwise, an overlapping repair is performed. Finally, the vaginal mucosa and perineal skin are closed with interrupted sutures. At the end of the surgery, we routinely utilize a 10.67 mm (F32) silicone drainage tube (VERACON Medical Apparatus, China) as TDT (Figure 2), typically inserted approximately 10 cm, to ensure adequate coverage of the surgical site. The tube is secured with perineal sutures and the excessive length of the drainage tube is cut off (Figure 3). Postoperatively, patients receive peripheral parenteral nutrition, followed by gradual feeding advancement, with intermittent blood tests on post-operative days 2 and 7, including complete blood count and serum biochemistry. The TDT is removed once watery stool discharge is observed through the tube.

Statistical Analysis

SPSS software (SPSS version 26.0; SPSS Inc., Chicago, IL, USA) was used to perform the statistical analyses. Because this investigation is exploratory, all statistical tests were two-sided with a significance level of 0.05, and p-values were reported without formal adjustment for multiplicity. All numerical values were tested for normality with the Shapiro–Wilk test, where $p > 0.05$ indicated a normal distribution. Variables that followed a normal distribution are presented as the means and standard deviations, whereas nonnormally distributed variables are presented as medians and interquartile ranges, ie, 25th-75th percentiles. Categorical variables are reported as counts and percentages.

Depending on the distribution of data, either the independent samples *t*-test or Mann–Whitney *U*-test was used for comparison. For categorical variables, the chi-squared test was applied when the expected frequency in all cells was greater than or equal to 5, otherwise Fisher's exact test was used. All p-values presented were two-sided. A p value of <0.05 was considered statistically significant.

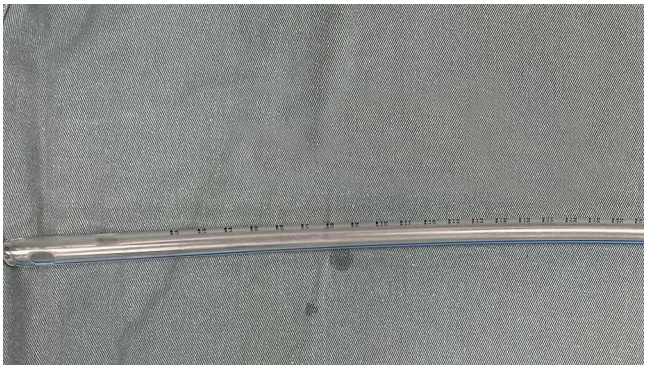

Figure 2 We use a 10.67 mm (F32) silicone drainage tube as the TDT. The drainage tube has multiple openings at its tip to facilitate outflow. It is inserted approximately 10 cm through the anal canal to ensure adequate coverage of the surgical site.

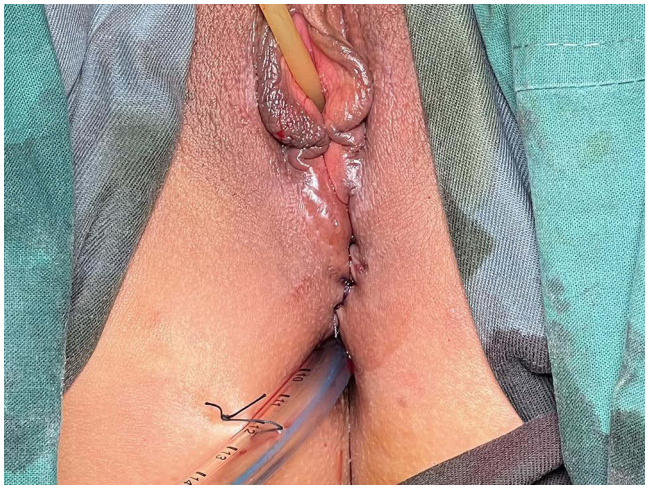

Figure 3 Perineal suture for fixation. The tube is secured and the excessive length of the drainage tube is cut off.

Results

Clinical characteristics of the patients are presented in Table 1. A total of 31 patients were enrolled in our study. Based on postoperative outcomes, patients were stratified into success (n=23, 74.2%, 95% CI 56.8–86.3%) and failure (n=8, 25.8%, 95% CI 13.7–43.2%) groups. No patient suffered from postoperative wound breakdown. The median age was 34 years (30–52.5) and the interval between injury and operation was 3 years (1–22.5). TDT was utilized in 19 patients

Table 1 Clinical Characteristics of the 31 Patients

	All Patients (n=31)	Success (n=23)	Failure (n=8)	p
Median age (years)	34 (30–52.5)	33 (30–44)	34.5 (32–38)	0.874
BMI	21.37 (19.82–23.91)	22.18 (19.57–24.97)	23.67 (20.82–26.01)	0.22
Gravidity	2 (1.5–3)	2 (1–3)	2.5 (2–4)	0.58
Parity	2 (1–2)	2 (1–2)	1.5 (1–2)	0.38
Interval between injury and operation (years)	3 (1–22.5)	4 (1–14)	2.5 (1–8)	0.98
Previous repair times				0.54
0	12 (38.71%)	10 (43.5%)	2 (25%)	
1	17 (54.84%)	12 (52.2%)	5 (62.5%)	
2	2 (6.45%)	1 (4.3%)	1 (12.5%)	
Mode of delivery				0.77
Spontaneous vaginal	22 (70.97%)	16 (69.57%)	6 (75%)	
Forceps or episiotomy	9 (29.03%)	7 (30.43%)	2 (25%)	
Birth weight (g)[a]	3541.60 ± 447.71	3475 ± 460.53	3391.43 ± 441.60	0.74
Degree of tear				0.27
III	4 (12.90%)	2 (8.7%)	2 (25%)	
IV	27 (87.10%)	21 (91.3%)	6 (75%)	
Endoanal ultrasound				
EAS defect length (mm)	26 ± 7.51	26.01 ± 8.20	25.92 ± 4.02	0.97
EAS defect angle (degree)	141.21 ± 49.45	148.86 ± 50.07	118.29 ± 42.79	0.14
Method of repair				0.75
End-to-end	28 (90.30%)	21 (91.3%)	7 (87.5%)	
Overlap	3 (9.70%)	2 (8.7%)	1 (12.5%)	
Operation Time (min)	35 (30–45)	42.5 (30–50)	35 (32–35)	0.06
TDT	19 (61.29%)	13 (56.5%)	6 (75%)	0.31
Duration of TDT (days)	7 (7–10)	9 (7–11.5)	7 (6–7)	**0.03***

(*Continued*)

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Table 1 (Continued).

	All Patients (n=31)	Success (n=23)	Failure (n=8)	p
Postoperative complication	9 (29.03%)	5 (21.73%)	4 (50%)	0.185
Hepatic dysfunction	8 (25.81%)	5 (21.73%)	3 (37.5%)	
Urinary infection	1 (3.22%)	0 (0%)	1 (12.5%)	
LOS (days)	13.39 ± 2.56	13.39 ± 2.69	13.38 ± 2.33	0.99

Note: Asterisk points out p value<0.05.
Abbreviations: BMI, Body mass index; EAS, External anal sphincter; TDT, Transanal drainage tube; LOS, Length of stay.

(61.3%). The predominant postoperative complication was transient hepatic dysfunction (8/31, 25.8%, 95% CI 13.7–43.2%), manifesting as an alanine aminotransferase (ALT) elevation of 62.5[48–116.5] U/mL, at a median of 7.5 [2–8] postoperative days. Comparative analysis between the success and failure groups revealed that the success group had a longer TDT placement than the failure group (9[7–11.5] vs 7[6–7] days, p=0.03). There was no significant difference in the BMI (p=0.22), interval between injury and operation (p=0.98), previous repair (p=0.54), mode of delivery (p=0.77), neonatal birth weight (p=0.74), degree of perineal tear (p=0.27) or method of repair (p=0.75) between the two groups. All patients tolerated the TDT well and no tube required early removal due to intolerance.

To further evaluate the optimal duration of postoperative TDT placement, patients in the TDT group were subdivided into two groups based on an 8-day cutoff: those with a placement duration of ≤8 days and those with >8 days (Table 2). The results indicated a statistically significant difference in surgical success rates between the two groups (≤8 days: 6/12, 50%, 95% CI 25.4%-74.6%; >8 days, 7/7, 100%, 95% CI 64.6%-100%, p = 0.034). No significant differences were observed in other clinical characteristics between the two groups.

Table 2 Clinical Characteristics of Patients with TDT Placement

	TDT (n=19)	≤ 8 Days (n=12)	>8 Days (n=7)	p
Median age (years)	33 (30.5–41)	32.0 (30.0–37.25)	35.0 (32.0–55.5)	0.432
BMI	22.86 (20.20–25.04)	21.84 (19.38–24.15)	23.83 (21.77–25.10)	0.261
Gravidity	2 (1.5–3)	2.0 (1.75–3.0)	3.0 (2.0–3.5)	0.432
Parity	2 (1–2)	1.5 (1.0–2.0)	2.0 (1.5–2.5)	0.227
Interval between injury and operation (years)	3 (1–11)	3.0 (1.0–4.25)	14.0 (0.84–29.0)	0.592
Previous repair times				0.143
0	6 (31.58%)	2 (16.67%)	4 (57.14%)	
1	11 (57.89%)	8 (66.67%)	3 (42.86%)	
2	2 (10.53%)	2 (16.67%)	0 (0%)	
Mode of delivery				0.568
Spontaneous vaginal	12 (63.16%)	7 (58.33%)	5 (71.43%)	
Forceps or episiotomy	7 (36.84%)	5 (41.67%)	2 (28.57%)	
Birth weight (g)[a]	3370.86 ± 337.01	3475 ± 460.53	3391.43 ± 441.60	0.74
Degree of tear				0.891
III	2 (10.53%)	2 (16.67%)	1 (14.29%)	
IV	17(89.47%)	10 (83.33%)	6 (85.71%)	
Endoanal ultrasound				
EAS defect length (mm)	25.31 ± 7.06	26.01 ± 8.20	25.92 ± 4.02	0.837
EAS defect angle (degree)	134.27 ± 50.66	148.86 ± 50.07	118.29 ± 42.79	0.711
Method of repair				0.704
End-to-end	16 (84.21%)	10 (83.33%)	6 (85.71%)	
Overlap	3 (15.79%)	2 (16.67%)	1 (14.29%)	
Operation Time (min)	35 (34.5–41.28)	35.0 (33.0–36.09)	39.35 (39.35–45.0)	0.167

(*Continued*)

Table 2 (Continued).

	TDT (n=19)	≤ 8 Days (n=12)	>8 Days (n=7)	p
Postoperative complication	6 (31.58%)	4 (33.33%)	2 (28.57%)	0.734
Hepatic dysfunction	5 (26.31%)	3 (25%)	2 (28.57%)	
Urinary infection	1 (5.26%)	1 (8.3%)	0 (0%)	
LOS (days)	14.32 ± 2.38	13.39 ± 2.69	13.38 ± 2.33	0.99
Success	13(68.42%)	6 (50%)	7 (100%)	**0.034***

Note: Asterisk points out p value<0.05.
Abbreviations: BMI, Body mass index; EAS, External anal sphincter; LOS, Length of stay.

Table 3 PCS, MCS, and Wexner Scores in 31 Patients

	Preoperative	Postoperative	p
SF-12: PCS	35.72 (27.77, 39.89)	40.77 (37.17, 43.53)	<0.001
SF-12: MCS	58.31 (50.66, 70.21)	86.17 (80.49, 89.72)	<0.001
Wexner score	12.00 (9.00, 15.00)	1.00 (0.00, 3.00)	<0.001

During follow-up, patients were asked to fill out the SF-12 (v2) score and Wexner score questionnaires (results shown in Table 3). The SF-12 outcomes were stratified into PCS and MCS. Longitudinal comparisons were made between postoperative scores and preoperative baselines. All patients exhibited significant improvements in SF-12 and Wexner scores (both p<0.001); changes exceeded the prespecified MCIDs for Wexner score and SF-12 score, supporting the effectiveness of repair, although partial fecal incontinence persisted in the failure subgroup.

Comparative analysis of changes in PCS, MCS, and Wexner score pre- and post-operatively is shown in Table 4. Subsequent analysis revealed that the TDT placement was associated with a more favorable postoperative recovery of anal sphincter function. TDT group showed greater Wexner score improvements, which also meets the MCID we

Table 4 Comparative Analysis of PCS, MCS, and Wexner Score Changes

	SF-12: PCS		SF-12: MCS		Wexner Score	
	Variation	p	Variation	p	Variation	p
Mode of delivery		0.881		0.079		0.578
Spontaneous vaginal	4.82(1.69, 10.25)		22.29±13.29		9.73±4.11	
Forceps or episiotomy	3.31(0.90, 17.79)		31.54±11.65		10.56±2.4	
Degree of tear		0.768		0.544		0.242
III	2.63(1.23, 11.75)		28.85±9.68		12±2.94	
IV	3.34(1.62, 11.69)		24.4±13.86		9.67±3.72	
Previous repair times		0.800		0.154		0.581
0	4.52(1.70, 9.00)		19.13±13.57		10.83±3.59	
1	3.34(1.25, 13.62)		28.64±12.17		9.35±3.92	
2	2.56(1.19,-)		28.93±16.72		10.00±1.41	
Method of repair		0.548		0.166		0.247
End-to-end	3.63(1.41, 11.21)		23.88±13.34		9.71±3.62	
Overlap	1.81(0.09,-)		35.21±9.79		12.33±4.04	
Postoperative complication		0.050		0.881		0.381
No	6.50(2.78, 12.60)		24.74±13.56		9.59±3.89	
Yes	1.34(0.84, 5.72)		25.55±13.6		10.89±3.1	

(*Continued*)

Table 4 (Continued).

	SF-12: PCS		SF-12: MCS		Wexner Score	
	Variation	**p**	**Variation**	**p**	**Variation**	**p**
TDT		0.441		0.881		**0.004***
No	3.30(1.49, 9.22)		24.51±13.58		7.67±3.37	
Yes	5.72(1.19, 14.36)		25.27±13.56		11.42±3.13	

Notes: Variation indicates the pre-to-postoperative difference. Asterisk points out p value<0.05.
Abbreviation: TDT Transanal drainage tube.

proposed (11.42±3.13 vs 7.67±3.37 points; mean difference 3.75, 95% CI 2.01–5.49; p=0.004). There was no significant difference in the mode of delivery (p=0.578), degree of tear (p=0.242), previous repair times (p=0.581), or method of repair (p=0.247) in the aspects of improving PCS, MCS and Wexner scores.

Discussion

Our team was the first to introduce TDT into surgical repair for chronic perineal tear and systematically evaluate its clinical outcome. We also assessed patient-reported outcomes (Wexner and SF-12 scores) and predefined minimal clinically important differences (MCIDs) to ensure that observed changes were clinically meaningful.

Our data indicated that TDT placement may improve the anal sphincter function when used at the time of anal sphincteroplasty. Notably, the successful group retained the tube for a longer duration than the failure group. We also conducted a comprehensive characterization of the chronic perineal tear patients and performed follow-up assessments. Comparative analysis of pre- and postoperative SF-12 and Wexner scores demonstrated significant improvement. Importantly, the magnitude of change in both Wexner and SF-12 scores exceeded our predefined MCIDs, underscoring their clinical relevance. These results underscore the critical role of surgical repair and offer valuable insights for clinical management.

In particular, the TDT group showed significantly greater improvement in the Wexner score compared with the non-TDT group, and the successful group retained the tube for a median duration of 9 days compared with 7 days of the failure group (p=0.03). Subgroup analysis revealed that the success rate was significantly higher in patients with TDT placement longer than 8 days compared to those with a duration of 8 days or less (p = 0.034). These findings suggest that TDT may alleviate symptoms of fecal incontinence. The underlying mechanism remains unclear, but several factors may contribute. First, TDT may help reduce local intraluminal pressure. Yang et al suggested that in the early postoperative phase, several factors can lead to anal sphincter hypertonicity and increase intraluminal pressure, such as pain, fear, inflammation, and trauma, which may be alleviated by decompression with a tube.[9] By maintaining low intraluminal pressure, TDT may also reduce mechanical stress on the freshly repaired sphincter and thereby decrease the risk of repair site disruption. Second, TDT may help prevent fecal contamination. Although postoperative peripheral parenteral nutrition is administered to prevent fecal production, intestinal secretions and residual stool may still compromise the wound. Current guidelines recommend the use of single-dose antibiotics during surgery.[18,19] In cases of delayed healing, contamination may worsen tissue injury. Thus, a TDT may provide more favorable conditions for wound healing.

Although chronic perineal tears are not life-threatening, it can markedly impair women's quality of life and are often accompanied by psychological distress, including anxiety and depressive disorders, underscoring the importance of effective surgical repair.[2] Unlike repairs of fresh wounds for OASI, which often took place upon recognition after vaginal delivery, chronic perineal tears are frequently associated with scar hyperplasia and impaired local vascularity, often requiring partial scar excision during surgery. This inevitably increases suture tension, which could negatively impact wound healing. To reduce local intraluminal pressure and prevent fecal contamination around the repair site, our center began to routinely employ TDT following surgical repair for chronic perineal tears.

Over the past decades, TDT has been recognized as an effective strategy for preventing anastomotic leakage following rectal cancer surgery. TDT reduces intraluminal pressure and diverts fecal flow, thereby facilitating anastomotic healing.[9–11] In gynecologic oncology, Kato et al similarly reported TDT placement after pelvic exenteration for

ovarian or endometrial cancer appeared to reduce the incidence of anastomotic leakage and the need for stoma diversion.[12,13] Effective however, Matsuda et al raised concerns about potential TDT-related complications, such as bleeding and injury of the surgical site or intraluminal wall, mainly due to direct contact with the TDT tip.[20] In our cohort, no major TDT-related complications were observed except the reports of perineal discomfort and pain. A few patients also experienced accidental tube dislodgement. These findings are consistent with previous studies, which similarly did not report severe adverse events.[21–23] Carboni et al noted a case of urinary retention with pain requiring analgesics, which resolved after TDT removal.[24]

In our cohort, the mean length of stay (LOS) was 13 days—substantially longer than reports after primary OASI repair around 3 days.[25] This was primarily driven by our perioperative dietary transition. Existing perioperative guidelines for perineal tears are largely derived from fresh injuries (OASI repair) and typically recommend scheduled use of stool softeners and oral laxatives,[2] but they provide no specific dietary recommendations. By contrast, women presenting with chronic perineal tears often require scar excision and reconstruction, and programs working in resource-limited settings report longer LOS of 10–11.2 days.[26,27] These figures align with our practice of initial bowel rest with parenteral nutrition and cautious diet advancement to protect the surgical site. During the dietary transition, we perform serial monitoring of complete blood counts and serum biochemistry. A few patients developed transient elevations in liver enzymes while receiving parenteral nutrition; all abnormalities resolved after advancement to oral feeding, suggesting PN-related, self-limited hepatic insufficiency. High-quality studies defining optimal perioperative management for chronic tears are lacking and warrant further study.

Nevertheless, the optimal diameter, insertion depth, and duration of TDT placement remain undetermined. Further studies with larger sample sizes are warranted, and future randomized controlled trials may provide more definitive evidence.

This study has several inherent limitations. First, it was a single-center retrospective study with a limited sample size, which may limit the statistical power and generalizability of our findings and the retrospective nature could introduce selection bias. Second, chronic perineal tears often require scar excision to enable fresh tissue approximation. Due to inadequate residual EAS length in these cases, overlapping repair was often not feasible, and end-to-end repair was predominantly performed. Only three patients in our cohort underwent overlapping repair, precluding a meaningful comparison between the two suturing techniques. Last, the MCID for the Wexner score was established in a study including fecal incontinence of heterogeneous etiologies, rather than specifically for perineal lacerations. And the SF-12 MCID is disease-specific. These factors should be considered when interpreting questionnaire-based outcomes in this cohort.

Conclusion

Surgical repair remains essential for patients with chronic perineal tears, as it may alleviate symptoms of fecal incontinence and improve quality of life. Postoperative TDT placement may further optimize anal sphincter function, and placement for more than 8 days may be associated with better clinical outcomes. These findings underscore a potential perioperative consideration, while highlighting the need for larger multi-center studies and long-term follow-up to confirm efficacy and guide future clinical guidelines or randomized trials.

Abbreviations

TDT, Transanal drainage tube; OASI, Obstetric anal sphincter injuries; PCS, Physical component summary; MCS, Mental component summary; EAS, External anal sphincter; MCID, Minimal clinically important difference; LOS, Length of stay.

Ethical Statement

This study was conducted in accordance with the Declaration of Helsinki and was approved by the Institutional Review Board of the Peking Union Medical College Hospital (PUMCH) (K5059). Written informed consent was obtained from the patients.

Author Contributions

W.L. and X.M.B. contributed equally to this work. All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took

part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors report no conflicts of interest in this work.

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