

# Catgut Implantation at Baliao and Xingfu One Acupuncture Point to Treat Dysdefecation in Patients with Incomplete Spinal Cord Injury: Three Cases Report

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## Abstract

**Objective:** To probe into the effect of catgut implantation at Baliao and Xingfu One Acupuncture Point on dysdefecation in patients with incomplete spinal cord injury (SCI). **Methods:** Three SCI patients voluntarily accepted catgut embedding at Baliao and Xingfu One Acupuncture point. Before and after treatment, they were filled out the self-rating scale of defecation, including the data of defecation frequency, total defecation time, defecation effort, fecal texture, fecal characteristics and fecal incontinence, etc. **Results:** Compared with the baseline data, constipation was improved and fecal incontinence was disappeared. **Conclusions:** Catgut implantation at Baliao and Xingfu One Acupuncture Point is effectual for patients with neurogenic dysporia secondary to incomplete SCI.

## Keywords

Baliao, Xingfu One Acupuncture Point, Catgut Implantation, Spinal Cord Injury, Dysdefecation

## 1. Case Report

Sacral neuromodulation is a low-frequency electric pulse regulation technique of

sacral nerve using interventional technique. SNM is not only used for refractory Overactive Bladder, idiopathic urinary retention [1] [2], fecal incontinence [3], but also has some effects on neurogenic bladder [4], chronic constipation [5]. However, it has the disadvantage, such as high price, complicated operation, radioactive and postoperative infection and so on. It is the common task of Urology, neurology, rehabilitation medicine and multi-professional team to find a more simple, effective and cheap treatment. How to make SNM further convenient and more acceptable to patients? Apart from SNM, is the pudendal nerve touch feasible? What is the relationship between them? In our previous clinical studies, it has been confirmed the effectiveness of Catgut Implantation at Baliao and Xingfu One Acupuncture Point for urinary incontinence in patients with incomplete SCI [6]. Then whether this treatment is effective for defecation disorders in patients with incomplete SCI? Presently reports are as follows.

2018-2019, three cases with dysdefecation secondary to incomplete spinal cord injury (SCI) were collected (**Table 1**). They were assessed the clinical efficacy score of defecation (self-assessment) before and after treatment (**Table 2**).

All patients signed informed consent before per treatment. They accepted catgut embedding at bilateral Baliao, Xingfu One Acupuncture points for three times (an interval of 14 days). Four pairs of posterior sacral foramen are called Baliao (green marker); Xingfu One Acupuncture point is the same level as the fourth posterior sacral foramen and it is close to the lateral edge of the sacrum (red one) (**Figure 1**).

**Figure 2** showed disposable acupoint catgut embedding assistant package and syringe needle (**Figure 2**).

All patients were not allowed to bathe within 24 hours after therapy. No spicy and irritating foods were permitted to eat within 3 days after catgut embedding. Before and after the remedy, they recorded the data of defecation frequency, total defecation time, defecation effort, fecal texture, characteristics and incontinence, etc. Compared to the baseline data, constipation was improved and fecal incontinence was disappeared (**Tables 3-5**), (**Figure 3**).

No related adverse events were found. The informed consent was obtained from all subjects to report the cases.

## 2. Discussion

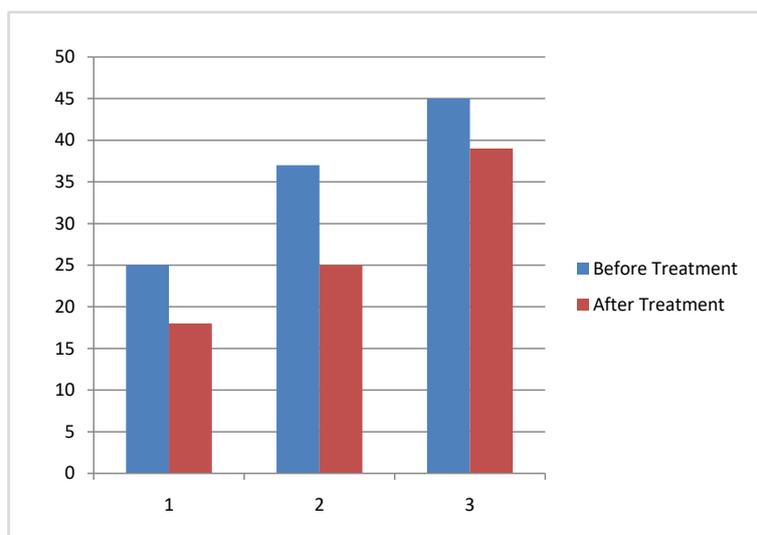
From **Table 3**, we can see that, except fecal characteristics, three patients' sub-scores of clinical effect after treatment were lower than that before treatment. **Table 4** and **Figure 3** indicate that each patient' total score of clinical effect after therapy is also lower than that before therapy. In **Table 3**, the most significant change is fecal incontinence: This is closely related to the first patient. Before catgut embedding, the frequency of fecal incontinence of this patient is less than or equal to 1 time/week, and after catgut embedding, fecal incontinence disappears. See **Table 5** for details. The score of fecal characteristics slightly increased, indicated that in general, the stool of patients after treatment tends to be softer.



**Figure 1.** Anatomical sketch of Baliao and Xingfu One Acupuncture point.



**Figure 2.** Appliances of catgut embedding.



**Figure 3.** Changes in total score of clinical effect on defecation in 3 patients before and after treatment.

**Table 1.** Baseline characteristics of the cases.

Number	Gender	Age (y)	Duration of SCI (y)	Disease	Constipation	Fecal Incontinence
1	F	37	2	SCI (C4 AIS Grade D)	Yes	Yes
2	F	19	2	Cauda Equina Syndrome	Yes	No
3	M	36	1	SCI (T10 AIS Grade C)	Yes	No

**Table 2.** Clinical efficacy score of defecation.

	0	3	5	7	score
Defecation Frequency (times/day)	1 day once	2 - 3 days once	4 - 5 days once	>5 days once	
Total Defecation Time (min)	<15 mins	15 - 30 mins	30 - 60 mins	>60 mins	
Defecation Effort	easy	slightly difficult	more difficult	hard	
Fecal texture	soft	slightly hard	hard	Very hard	
Fecal Characteristics	Dispersing hard blocks, Similar to hard block or granular	Dry hard block, Surface Crack Smooth and Soft, Like Sausage (Banana)	Clear-Cut Margin, Soft Cluster	marginal indistinctness Paste Like	
rectum mucosa protector (Glycerin)	No	0.5 - 1 drug a day	2 - 3 drugs a day	>4 drugs a day	
Manual Dilatation	No	<5 turns	5 - 10 turns	>10 turns	
Hand digging	No	≤once/week	2 - 3 times/week	>3 times/week	
Fecal incontinence	No	≤once/week	2 - 3 times/week	>3 times/week	
Total Score					

**Table 3.** Changes in sub-scores of clinical effect in 3 patients before and after therapy.

Item	Arithmetic mean ± Standard deviation	
	Before therapy	After therapy
Defecation Frequency (times/day)	2.00 ± 1.73	1.00 ± 1.73
Total Defecation Time (min)	4.33 ± 1.15	3.67 ± 1.15
Defecation Effort	5.67 ± 1.15	4.33 ± 2.31
Fecal texture	5.00 ± 0.00	3.67 ± 1.15
Fecal Characteristics	3.33 ± 2.89	3.67 ± 1.15
rectum mucosa protector (Glycerin)	3.67 ± 1.15	3.00 ± 0.00
Manual Dilatation	3.33 ± 2.89	2.00 ± 1.73
Hand digging	5.67 ± 2.31	4.67 ± 4.04
fecal incontinence	1.00 ± 1.73	0.00 ± 0.00

**Table 4.** Changes in total score of clinical effect in 3 patients before and after treatment.

Number	Before treatment	After treatment
1	25	18
2	37	25
3	45	39
Arithmetic mean ± Standard deviation	35.67 ± 10.07	27.33 ± 10.69

**Table 5.** Changes in fecal incontinence of 3 cases before and after therapy.

Number	Before therapy	After therapy
1	3	0
2	0	0
3	0	0

Baliao (BL 31-34), lies in four pairs of posterior sacral foramen, it is equal to the Sacral Jiaji Point. The reinforcing stimulation of the above target region on the sacral nerve can promote function recovery of the intestinal nervous system and the autonomic nervous one. Through the action relationship of Brain-gut Axis, Regulate the somatic-visceral reflex, the afferent of sensory signals, the activity of internal and external anal sphincter. Patients can reduce the colonic transit time, enhance the contractility of the intestine, increase the secretion of the intestinal fluid, boost the coordination of pelvic floor muscles, etc., so as to improve the defecation [7] [8] [9]. Because of its unique characteristics in the remedy of urogenital diseases, pelvic floor anorectal ones and so forth, it had been highly praised by doctors through the ages, especially for its obvious effect of Zhongliao (BL 33), Ciliao (BL 32). Historically, There is a widespread clinical application [10] [11] [12].

Xingfu One Acupuncture Point is about 6 cm deep from the surface of the body, it is even with the Fourth sacral posterior foramen and it is three transverse fingers (ring, middle and index finger) away from the sacral median ridge. This is extra nerve point. It has a good curative effect by touching pudendal nerve in treating anorectal or urinary [6] or sexual dysfunction, gynecology and other diseases.

Acupoint catgut embedding achieves therapeutic aim by stimulating acupuncture points for a long time. This therapy is safe, simple, cheap and well-compliant. It is worthy of clinical research, application and promotion. This case report shows that, after catgut implantation, the patients' constipation and fecal incontinence were significantly improved. The two groups of acupoints act on mutual promotion and synergistic effect. It is a simple and easy Chinese-style therapy of "sacral nerve regulation" and "pudendal nerve touch".

### 3. Conclusion

Catgut Implantation at Baliao and Xingfu One Acupuncture Point is effective for dysdefecation secondary to incomplete SCI.

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### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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