Sacral Neuromodulation for Constipation

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Learning Objectives

- Understand the technique and patient selection.
- Understand the clinical outcome of SNM for constipation.

70.1 Introduction

Since the introduction of sacral neuromodulation in the field of coloproctology, there has been an interest in its application in patients with constipation. This interest was encouraged by the clinical observation that patients treated with SNM for other pelvic organ dysfunctions reported, among other changes, a tendency toward less constipation. Since 2001, the role of SNM in the treatment of constipation refractory to conservative treatment has been studied [1]. Overall, the existing evidence is low, with three systematic reviews having been published [1–4].

70.2 Technique and Its Evolution

The technique is the same as that for fecal incontinence (see Chap. 40).

70.3 Mechanism of Action

The mechanism of action is also described in the above-cited chapter. However, regarding the use of SNM in constipation, an observed increase in colonic transit and anterograde contractile activity and a reduction in retrograde colonic activity were of special interest [5, 6].

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70.4 Indications

Patient selection is based on the outcome of a test stimulation, during which the reduction of symptoms is measured. It is noteworthy that there is no general agreement on a specific outcome measure; a variety have been used. Also the selection for test stimulation is not limited to a specific pathophysiologic or morphologic cause of constipation. Thus, the broad criteria result in heterogeneous patient collectives.

70.5 Prognostic Factors of Outcome

As a consequence of the technique's broad use in constipation, no prognostic factor for clinical success could be identified. As noted above, the selection for permanent therapeutic stimulation relies on the outcome of the test phase. However, the failure rate of test stimulation appears to be higher and the results are less reliable than in fecal incontinence.

70.6 Outcome

Since the introduction of SNM for constipation, outcome reports on symptoms and quality of life have accumulated [7–23], few with long-term follow-up (see Table 70.1). A difference in outcome can be found between early, mainly retrospective, studies and more recent methodologically improved studies, which report less favorable results. The latter and the limitation of quality outcome data have resulted in some countries declining coverage for this use. However, despite uncertain and relatively low clinical efficacy, the technique continues to be used because of its limited invasiveness and reversibility and is considered an alternative to more invasive, irreversible operative interventions. [24].

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Table 70.1 SNS for constipation: outcome

Author	Year	Patients (*N*)	Follow-up months[a] (range)	*N* temporary	*N* Permanent	Improvement (intention-to-treat: %)
Kenefick et al. [8]	2002	4	8 (1–11)	ns	4	3/ns
Kenefick et al. [9]	2002	2	12	2	2	2/2
Holzer et al. [10]	2008	19	11 (2–20)	19	8	8/19 (42%)
Vitton et al. [11]	2009	6	2–50 weeks	6	5	0/6 (0%)
Kamm et al. [12]	2010	62	28 (1–55)	62	45	39/62 (63%)
Maeda et al. [13]	2010	70	28 (0–70)	70	38	35/38 (54%)
Naldini et al. [14]	2010	15	42 (24–60)	15	9	6/9
Carriero et al. [15]	2010	13	22 (12–26)	13	11	6/11
Sharma et al. [16]	2011	21	38 (18–62)	21	11	10/21 (48%)
Govaert et al. [17]	2012	117	37 (4–92)	117	68	61/117 (52%)
Knowles et al. [7]	2012	13	19	13	11	9/13 (69%)
Ortiz et al. [18]	2012	48	26 s (6–96)	48	23	14/48 (29%)
Graf et al. [19]	2015	44	24 (4–81)	44	15	5/44 (11%)
Ratto et al. [20]	2015	61	51 (±15)	61	42	20/61 (33%)
Patton et al. [21]	2016	53	24	ns	53	3/53 (ns)
Zerbib et al. [22]	2017	36	12	36	20	11/36 (31%)
Maeda et al. [23]	2017	62	60	62	45	14/62 (23%)

[a]Unless otherwise noted
ns not stated

Recently, there has been increased interest in the use of this technique in constipation owing to rectal hyposensitivity [7] in children [25–27] and in patients with low anterior resection syndrome after rectal resection [28, 29]. For these indications, despite limited existing evidence, the lack of attractive alternatives renders the technique a possible therapeutic option.

Take-Home Messages

SNM for treatment of constipation is less effective than for treatment of fecal incontinence. Recently, its therapeutic effectiveness has been challenging. Despite uncertain and relatively low clinical efficacy, the technique is continued to be used because of its limited invasiveness and reversibility and is considered an alternative to more invasive, irreversible operative interventions. Patient selection for permanent stimulation therapy is based on the clinical outcome of test phase.

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