

# Electrogalvanic Stimulation for Levator Syndrome: How Effective is It in the Long Term?

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Levator syndrome is a symptom complex of severe pain and pressure in the anorectal area. Electrogalvanic stimulation (EGS) has been proposed as a treatment for this condition. Several reports have described EGS as up to 90 percent "effective" in treating levator syndrome, but the length of follow-up was uncertain or short-term in these studies. The purpose of this study was to examine the long-term benefits of EGS in levator syndrome patients treated at one institution. All patients undergoing EGS for levator syndrome between 1985 and 1991 were studied. Initial complaints, physical examination, number of treatments, procedure tolerance, and long-term benefit were determined through personal interviews and chart reviews. There were 52 patients (63 percent females and 37 percent males) with a median age of 54 years (range, 24–84 years). All patients presented with anorectal pain. Tenderness was localized by examination to the left in 43 percent, to the right in 23 percent, and bilateral in 8.6 percent and was not localized in 2.6 percent. Fifty percent received fewer than four one-hour treatments, 33 percent received four to six treatments, and 17 percent received more than six treatments. Seventy-seven percent felt that the treatment was painless. Follow-up results were as follow: number, 52; percent follow-up, 88; mean follow-up, 28 months (range, 0–71 months); symptoms relieved, 19 percent; partial relief, 24 percent; no relief, 57 percent. Of four patients with a wrong diagnosis, three were ultimately diagnosed with recurrent pelvic cancer and one had an anal fissure. At our institution, EGS was a tolerable treatment, but a substantial number of patients received no benefit. An organic etiology of anorectal pain must always be excluded. [Key words: Electrogalvanic stimulation; Levator syndrome; Anorectal pain]

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Levator syndrome encompasses a poorly understood constellation of symptoms, which range from annoying rectal pressure to severe disabling pain. The etiology is unknown, but the pain is felt

to be secondary to spasm of the levator muscles. In 1982, Sohn *et al.*<sup>1</sup> reported that high-voltage electrogalvanic stimulation (EGS) provided good to excellent results for treating levator syndrome. The rationale for therapeutic benefits derived from EGS is that low-frequency oscillating electrical current administered by the EGS rectal probe induces fasciculation and fatigue in the spasming levator muscles. This fatigue in the muscle breaks this so-called "spasm cycle." Other investigators have reported varying results from treating levator syndrome with EGS.<sup>2–4</sup> The purpose of this study was to examine the long-term benefits of EGS used in the treatment of levator syndrome at our institution.

## METHODS

Patients undergoing EGS for levator syndrome between 1985 and September 1991 were studied. The decision for treatment of levator syndrome using EGS was made by one of seven examining staff colorectal surgeons. Initial complaints, physical examination, previous treatments, number of EGS treatments, and voltage ranges used in EGS were obtained by a retrospective chart review. Personal phone interviews were attempted during 1991 for all patients, to evaluate procedure tolerance and long-term benefit through use of a standardized questionnaire.

EGS was administered (according to the protocol used by Sohn *et al.*<sup>1</sup> in 1982) by placing the patient in the left lateral decubitus position, with a rectal probe from the electrogalvanic stimulator (Electro Galvanic Stimulator<sup>®</sup>; Electro-Med Health Industries, Miami, FL) held in place by a nurse. All treatments were given in the outpatient department. A pulse frequency of 80 cycles per second was used. The voltage was started at zero, gradually increased to a threshold of patient discomfort, and then slightly reduced. Treatment sessions lasted one hour, and voltage was gradually increased to

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patient tolerance during the hour. Treatments were every other day for three sessions, and more treatments were given if patients requested them.

## RESULTS

Fifty-two patients (33 females and 19 males) with an age range of 24 to 84 years (median age, 54 years) were studied. Chart review showed that all patients presented with anorectal pain. Tenderness was localized by digital anal examination to the left side in 15/35 (43 percent), to the right in 8/35 (23 percent), and bilateral in 3/35 (8.6 percent), and no tenderness was found in 9/35 (26 percent). The numbers of one-hour treatments were as follows: less than four, 30/52 (57 percent); four to six, 17/52 (33 percent); and greater than six, 5/52 (10 percent).

Attempts were made to contact all 52 patients. Table 1 shows the data pertaining to the 31 patients (21 females and 10 males) contacted by phone. Of the remaining 21 patients, 11 had specific follow-up notes in their charts (Table 1). Four patients (8 percent) were found to have the wrong initial diagnosis, with their final diagnoses being recurrent rectal cancer in two, prostate cancer in one, and anal fissure in one. Six patients were lost to follow-up.

Table 1 also shows the follow-up interval from first treatment until the patient was contacted by phone or results were noted in the chart.

During the phone interview, all patients were questioned regarding the amount of pain they experienced during the treatment. Seventy-seven percent (24/31) felt that the treatment was painless, and no complications were recorded.

For the twenty-four patients experiencing no relief with EGS, Table 2 shows the other treatments used with unknown benefit.

## DISCUSSION

Considerable confusion has existed in the literature regarding the precise definition of levator syndrome. When Thiele<sup>5</sup> described spasm of the levator muscles associated with anorectal pain in 1936, he used the term coccygodynia even though there was no coccygeal origin of pain. In 1959, Smith<sup>6</sup> described "levator spasm syndrome." His patients had symptoms identical to Thiele's.<sup>5</sup>

Treatment options have included Valium<sup>®</sup> use reported in 1965,<sup>7</sup> massage,<sup>8</sup> and EGS in 1982.<sup>1</sup> Since the introduction in 1982 of EGS for levator syndrome, remarkably few studies have evaluated the effectiveness of this treatment. Additionally, the duration of follow-up has not been recorded in all studies. Table 3 outlines several significant articles written on EGS. The results of the present study, demonstrating 57 percent of the patients receiving no benefit 5 to 38 months after EGS treatment, are similar to only one other study, by Billingham *et al.*<sup>4</sup> (Table 3).

**Table 2.**  
Other Treatments for Levator Syndrome for Patients Failing EGS (Benefit from These Other Treatments is Unknown)

Anal dilatation	1
Acupuncture	1
Urology evaluation	1
Biofeedback	1
Physical therapy	1
Bed rest	1
Valium <sup>®</sup>	1
Enemas/suppositories	2
Neurology evaluation	2
Psychiatry evaluation	3
Pain medication	3
Steroid injections or nerve blocks	3
"Just live with it"	7

**Table 1.**  
Results of EGS

Number	Benefit		
	Yes	No	Maybe
31 Phone interviews	5/31 (16%)	19/31 (61%)	7/31 (22%)
Follow-up mean	36.4 months	38 months	27 months
11 Chart follow-ups	3/11 (27%)	5/11 (45%)	3/11 (27%)
Follow-up mean	1.3 months	5 months	3.5 months
42 Total	8/42 (19%)	24/42 (57%)	10/42 (24%)

Follow-up mean = 28 months (range, 0-71 months).

**Table 3.**  
Overview of Articles on EGS for Levator Syndrome

Author/Year	n	Treatment Schedule	Results Excellent/ Good (%)	Results Fair/ Poor (%)	Follow-up
Sohn <i>et al.</i> <sup>1</sup> /1982	80	Three one-hour treatments over 3–10 days	90	10	?
Nicosia and Abcarian <sup>2</sup> /1985	45	15-minute to 30-minute treatments every other day for one to nine treatments	91	9	?
Oliver <i>et al.</i> <sup>3</sup> /1985	102	Three one-hour treatments over 10 days	68	32	?
Billingham <i>et al.</i> <sup>4</sup> /1987	20	15-minute to 60-minute treatments for 1–12 treatments	40	60	?
Present study	42	Three one-hour treatments over 10 days	43	57	0–71 months; mean = 28 months

Differences between studies may depend upon many factors, including criteria for diagnosis, patient selection, treatment regimen, and duration of follow-up. In the present study, diagnosis of levator syndrome was made by seven staff colorectal surgeons based on the history and examination. Since this syndrome encompasses a constellation of symptoms with unknown etiology, perhaps the patients not helped by EGS represent the most refractory cases or reflect that our institution is a tertiary referral center. Additionally, some patients may be initially helped by EGS, but with longer follow-up they have a return of their symptoms. Some patients received additional courses of treatment with variable results. The "test of time" remains one of the important parameters of effectiveness in treating any disease, and this is the first study to evaluate the effectiveness of levator syndrome treatment with EGS with any long-term follow-up.

The four patients treated for levator syndrome and found later to have another diagnosis point out that other causes of the pain must always be excluded, particularly when there is a past history of pelvic carcinoma.

Since levator syndrome can be difficult to treat, EGS should be considered as a therapeutic option when other treatments such as reassurance or Valium® fail. EGS may provide substantial benefit for some patients, and its use should certainly be con-

sidered for this condition because it is an innocuous form of therapy with no known complications or long-term sequelae. However, based upon this study, EGS does not provide substantial long-term benefit in the treatment of levator syndrome in the majority of patients.

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