Use of Botulin A Toxin in Achalasia

We report here on a case of achalasia that did not respond to repeated pneumatic dilation and was treated with endoscopic injections of botulin A toxin. The patient was a 45-year-old woman in whom the diagnosis of achalasia was established in 1992 by endoscopy, esophagogram, and esophageal manometry. Over the following 18 months, she had 11 treatments of pneumatic dilation, with unsatisfactory results. We then injected botulin A toxin endoscopically at five different sites into the cardia and distal esophagus. An ordinary sclerotherapy injection needle was used, and the total amount injected was 100 units. A post-injection manometry study showed a drop in lower esophageal sphincter resting pressure from 45 mmHg (pre-injection) to 32 mmHg (Figure **1a, b**), but esophageal body contraction waves continued to be simultaneous. The patient's symptoms initially improved, and her follow-up over the following three months was satisfactory. Unfortunately, her symptoms recurred after six months.

Achalasia is an uncommon disorder that is basically treated either by pneumatic dilation or surgery. Both treatment modalities are associated with significant morbidity (1). Recently, Pasricha et al. has reported successful treatment of local injection of botulin A toxin in one achalasia patient (2), following experimental work on laboratory animals (3). Botulin A toxin is a sterile lyophilized form of purified botulin toxin type lyophilized A, produced from a culture of the Hall strain of *Clostridium botulinum*. Few side effects have been reported when it has been injected into skeletal muscles in large doses, e.g., over 245 units (4).

In smooth muscle, it causes relaxation through its inhibitory effect on acetylcholine release (2). Our patient reported side effects of blurring of vision and a subjective feeling of swollen eyelids. These side effects resolved spontaneously during the 48 hours after the injection.

Although there was a satisfactory initial response to this treatment modality we believe the effect is short-lived. This may limit its use to only a few indications, e.g., old age and patients who refuse other options, particularly surgery.

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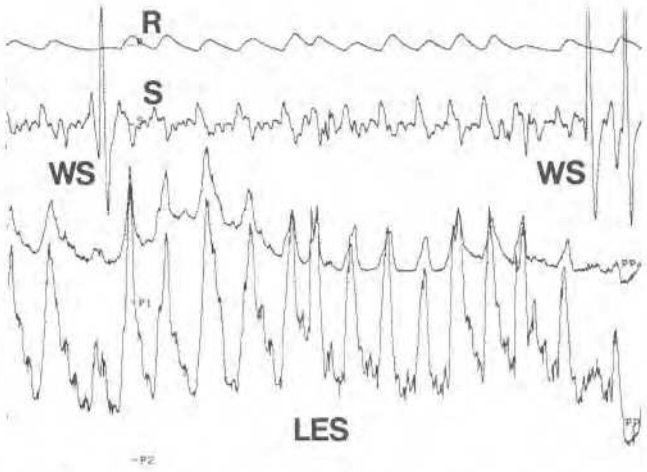

Figure 1a: Lower esophageal sphincter recording before botulin A toxin injection. The resting LES pressure was 45 mmHg. Each vertical square represents 10 mmHg, and each horizontal one represents one second.

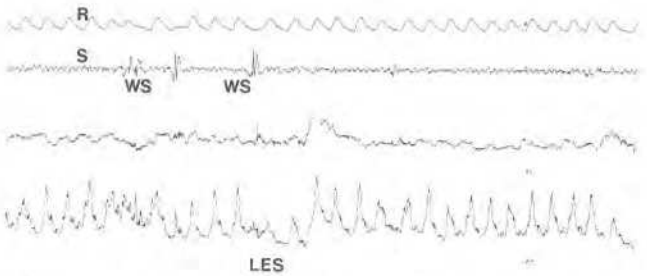

Figure 1b: Lower esophageal sphincter recording 24 hours after botulin A toxin injection. The resting LES pressure decreased to 32 mmHg. LES = Lower esophageal sphincter; R = Respiratory; S = Swallowing; WS = Wet swallow.

References

1. *Spencer J:* Achalasia cardia: dilatation or operation = [leading article]. Gut 1993; 34: 148–149.
2. *Pasricha P.J, Ravich W.J, Kalloo AN:* Botulinum toxin for achalasia [letter]. Lancet 1993; 341: 244–245.
3. *Pasricha P.J, Ravich W.J, Kalloo AN:* Injection of botulinum toxin into the distal esophageal sphincter in piglets: a unique investigative technique with potential therapeutic uses. Am J Gastroenterol 1992; 87: 1255.
4. *JanKovic J, Brin MF:* Therapeutic uses of botulinum toxin. N Engl Med 1991; 324: 1186–1194.

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