Outcomes of Chemical Component Paralysis Using Botulinum Toxin for Incisional Hernia Repairs

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I've never been to a Botox party...

Pain is complicated. Although much is known about pain physiology and the methods used to alleviate, suppress, or block pain, we still find it difficult to understand why postoperative pain is so different from one patient to another, even when we think we have performed “the same operation.” We are sometimes surprised that an operation that was supposed to be “easy and almost painless” results in lasting and frustrating pain. Laparoscopic incisional hernia repair is a good example. We still struggle to understand why is it more painful than many surgeons (and studies) are willing to admit.

Muscle spasm is associated with pain, but it is not always clear whether it is the result or the cause—or maybe both. Back pain is associated with spasm of the paravertebral musculature. Here, muscle relaxants, physiotherapy, or even just “rubbing the sore muscles” by a loving (or professional) hand, alleviates the suffer—although it does not directly relieve compression on the nerves by the herniated disk. Cutting (or chemically relaxing) the internal anal sphincter sometimes miraculously and immediately relieves the pain associated with chronic anal fissure, even though the fissure itself may heal only weeks later.

We have made remarkable progress in hernia surgery over the last few decades, and we can proudly say that recurrence rates have been reduced to a minimum. This reduction has come about because of a better understanding of abdominal wall anatomy and physiology and better use of abdominal wall reinforcement with a variety of synthetic (and sometimes biologic) materials. Postoperative pain,

though, has been much less improved, although techniques such as tension-free repair and laparoscopy have contributed to a better patient experience and easier recuperation.

The search for painless hernia surgery has resulted in some interesting work by Zendejas and his group, published in this issue of the *World Journal of Surgery* [1]. Botulinum toxin A (Botox), a potent muscle-paralyzing agent, is commonly used for various medical and cosmetic indications. It has been tried for abdominal muscular relaxation as an aid to repairing ventral hernias and for facilitating closure of midline defects.

It now appears that it has an analgesic effect as well. It is not yet clear whether it acts as a direct pain-modulating agent or by relaxing the muscles and preventing painful spasms (as mentioned above), or both. What's more important than the theory behind this effect is the fact that Zendejas et al. showed that patients treated with preoperative, multi-point botulinum toxin A injections to the lateral abdominal wall muscles reported less postoperative pain and required less narcotic analgesia.

Many questions remain after this preliminary, small, retrospective study, as the authors duly noted. Injection timing, dosage, technique, and location should all be optimized and standardized. Safety and long-term results should be verified—but the promise is there. If easier hernia closure and less painful recovery can be achieved, we should thank *Clostridium botulinum* once again.

Reference

1. Zendejas B, Khasawneh MA, Srvantstyan B et al (2013) Outcomes of chemical component paralysis using botulinum toxin for incisional hernia repairs. *World J Surg*. doi:[10.1007/s00268-013-2211-6](https://doi.org/10.1007/s00268-013-2211-6)

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