
Discussion

Surgical Treatment of Migraine Headaches by Corrugator Muscle Resection

Discussion by Bahman Guyuron, M.D., and Jennifer Kriegler, M.D.

Cleveland, Ohio

This article is intriguing because it combines two disciplines—plastic surgery and neurology—in an attempt to corroborate the results of our previously reported study¹ on the surgical treatment of migraine headaches. Although it is compulsory for a physician who surgically treats migraine headaches to become familiar with the affliction, patients who have casual or self-diagnosed migraines should never undergo surgery without a full evaluation by a neurologist. The list of potentially life-threatening conditions that can be mistaken for migraines is long. Therefore, it is critical that plastic surgeons do not consider themselves specialists in the diagnosis and treatment of this condition. Dr. Dirnberger astutely sought the cooperation of a neurologist to embark upon his study.

Like other migraine patients who have no expectation of finding a treatment that will stop the pain, Dr. Dirnberger embraced the opportunity to find relief through surgery. He sought surgical treatment by a colleague after reading our report¹ on the topic, and he commenced this study after he experienced a positive response to the procedure. According to the final results of his study, the majority of patients (68 percent of 60) benefited from surgery. Indeed, this chain of events is refreshing.

The criteria the authors use to classify patients and their responses to treatment differ from those in our second study.² Rather than focusing on frequency, duration, and severity, the authors have based their results on just duration of migraine headaches. Since a tremendous range in intensity of migraine headache pain exists, it would have been interesting to see whether addressing intensity and fre-

quency affected the analysis of surgical success. We utilized all three variables, as well as the Migraine Headache Index (intensity \times frequency \times duration), in our recently completed study.³

Another major difference between our study and this one is that some of this study's patients had recurrent headaches within 1 year. There are at least four plausible reasons for this:

1. The researchers did not use botulinum toxin type A as an indicator and operated on the frontal muscles of every subject entered into the study. In 80 percent of patients, frontal triggers are found to be just one component of migraine headaches. In fact, in our most recent study, only 11 of 91 patients had a single migraine trigger site.
2. Some patients who benefited initially from surgery may have experienced a placebo effect.
3. In our experience, removal of the corrugator alone has been less successful than removal of all of the glabellar muscles (which includes removal of the corrugator, depressor supercillii, and procerus). We currently remove all of these muscles in our surgical treatment of migraines.
4. The surgeon did not use a fat graft to shield the supraorbital and supratrochlear nerves from the muscle. We believe that when the muscle is subtotally removed or a fat graft is not used, migraine headaches may recur, although they may reappear less severely and less frequently.

The aforementioned factors could also be the reason for a lesser success rate in this patient group. Furthermore, the zygomaticotem-

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poral branch of the trigeminal nerve was not transected because the authors approached the corrugator and muscle group through a palpebral incision.

The authors were able to prove that patients with fewer headaches benefited more from the procedure. In fact, almost 90 percent of the patients in group A (1 to 4 days of migraine headache per month) and 75 percent in group B (5 to 14 days of migraine headache per month) had either elimination of or significant improvement in their migraines. This has been our experience as well. Generally, the more frequent the headaches, the more likely they are triggered from multiple sites. Inclusion of a control arm would have made this article more scientifically powerful as well.

An interesting point that this study addresses is that migraine headaches could be produced by compression of nerves. Although only observed on two occasions, this factor supports our theory that a peripheral mechanism is involved during the development of migraine headaches.

Regardless of the technical differences between this study and ours,³ patient fulfillment following surgical treatment of migraine headaches is similar. While surgeons might consider only complete elimination of this condition a successful outcome, patients rejoice in any reduction in intensity, frequency, or duration of migraines, as well as reduction in the use of medications with known side effects.

This article includes many strong points. Having reviewed numerous writings in the

past, we find the ethical way in which this study was conducted and reported praiseworthy. The fact that a neurologist has been involved from the onset also renders this report more meaningful.

Until we have a better explanation of how the surgical treatment of migraines alters the pathophysiology of these headaches and until we have followed up with an adequate number of postsurgical patients for a sufficient amount of time, we should avoid use of the term "cure" to describe our results. However, we enthusiastically share with Drs. Dirnberger and Becker a cautious optimism that, one day, we will be able to offer surgery as a "cure" for mild to severe migraines. We salute colleagues like Drs. Dirnberger and Becker who join us in the crusade against the dreadful entities labeled "migraine headaches."

*Bahman Guyuron, M.D.
29017 Cedar Road
Lyndhurst, Ohio 44124
bguyuron@aol.com*

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