The innovative idea of chemodenervation by injecting botulinum toxin into the extraocular muscles for treatment of strabismus was introduced by Dr. Alan Scott in 1987. Since that time, use of the toxin for many has become specific for treating the antagonist of a paretic muscle. It is frequently injected into the medial rectus muscle in the acute phase of a sixth cranial nerve palsy or combined with transposition surgery later on. There are many other uses for botulinum toxin in treating strabismus, but many of us don’t think of it as the first option. Our colleagues in Europe and South America have adopted its use to a much greater extent. For example, in Spain Dr. Pilar Gomez de Liano reports good results in the treatment of infantile esotropia administered with the child sedated. The same holds true in adult strabismus, as far as greater use internationally. I think that the administration of the toxin under electromyographic control is not taught as frequently in pediatric ophthalmology fellowships as it once was. When Dr. Scott began recruiting investigators for his studies, many strabismus surgeons were trained in San Francisco or in Ohio with Dr. Elbert McGoon. This training was excellent, but the technique of injecting particularly the horizontal rectus muscles is a skill easily achievable by most strabismus surgeons.

In this issue, Bansal and Marsh report botulinum toxin chemodenervation of the inferior oblique muscle in cases of secondary inferior oblique overaction to be useful where one needs to establish a risk of overcorrection following planned inferior oblique weakening. This is particularly true of cases where the primary position deviation may be small and symptoms of diplopia exist on contralateral side gaze, giving rise to a narrowed field of single binocular vision. This is certainly a novel approach for use in the treatment of superior oblique muscle palsy, but it does make one think of other potential uses. I have never attempted to inject the inferior oblique muscle, although I have injected the inferior rectus muscle many times. I am sure with electromyographic control this is a learnable skill.

Recently, Dr. Scott began injecting bupivacaine into the extraocular muscles to create greater contractile strength, intrinsic muscle stiffness, and size. He and others have treated esotropia by injecting bupivacaine into the lateral rectus muscle. Interestingly, he has shown that combining this with injection of botulinum toxin into the medial rectus muscle allows the lateral rectus muscle to regenerate to a shorter length, which augments its effect. Perhaps chemodenervation combined with what might be termed chemoaugmentation will find a niche in the treatment of strabismus. These innovative alternative management strategies may lead to other novel and effective therapies, as we have seen with botulinum toxin.

Rudolph S. Wagner
Editor

Dr. Wagner is a consultant for Alcon Laboratories, Inc.
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