

Facial Synkinesis after Autologous Fat Graft?

Hyun Gu Kang, MD
Myong Chul Park, MD, PhD
Dong Ha Park, MD

Department of Plastic and Reconstructive Surgery
Ajou University Hospital
Gyeonggi-do, Korea

Sir:

Facial synkinesis is an abnormal involuntary movement of one set of facial muscles accompanying a voluntary movement of a different facial muscle. It is not uncommon for patients with long-standing facial paralysis to present with abnormal, involuntary facial movements that impair facial symmetry and compromise facial function and expressivity.

To the best of our knowledge, there are no previous reports of facial synkinesis after fat graft.

A 38-year-old Asian woman complained of conjoint movement of her left cheek while blinking her eyes. The malar area of her left cheek moved inward when she blinked. The patient felt awkward and nervous about the involuntary movement of her left cheek. However, there was no pain, sensory change, or facial muscle weakness. On physical examination, there was no abnormal finding in her left cheek. Neurological examination was normal. She had no history of medical and neurological diseases and was not taking any medications. During history taking, it was noted that the patient had undergone autologous fat graft at a private clinic 2 years ago. The patient said that this unintended movement of her left cheek had developed 4 months after the fat graft procedure. Before that procedure, there was no asymmetry on her face. To treat the synkinetic movement of her left cheek, 15 units of botulinum toxin was injected in the left zygomaticus minor muscle. After 1 week, the patient did not experience any involuntary movement of her left cheek or any

awkward feeling. At the 6-month follow-up, she did not experience any abnormal feeling or synkinetic movement of her left cheek. There were no complications such as facial asymmetry and inanimate movement of facial expressions. These unintended movements arise from a damaged or compressed facial nerve that has not regenerated properly and appear as a late sequelae to a spontaneously healing facial nerve injury.

Several theories have been proposed for the development of synkinesis. The most commonly accepted theory is that when a nerve regenerates, it undergoes aberrant regeneration, which may accidentally innervate additional neighboring muscle fibers.¹ This phenomenon of regenerative nerves sprouting into the wrong peripheral branches is known as the Lipschitz theory.² In our case, the zygomatic branch of the facial nerve may have been damaged during autologous fat graft. During regeneration, a terminal part of the zygomatic branch of the facial nerve might have supplied some of the muscle fibers of zygomaticus minor. Consequently, the patient's malar area of the left cheek moved simultaneously when she blinked her eyes.

Nowadays, many women want to be treated by autologous fat graft to conceal wrinkles and folds on their face. Surgeons should be aware of this fact and they should carefully inject around the area innervated by the facial nerve. And even though they show facial synkinesis after fat graft, the injection of botulinum toxin can be a good option to treat. This article documents a good example of this rare phenomenon after fat graft.

Correspondence to Dr. Dong Ha Park
Department of Plastic and Reconstructive Surgery
Ajou University Hospital
Worldcup-ro 164, Yeongtong-gu, Suwon
Gyeonggi-do 443-721, Korea
growhand@hanmail.net

Copyright © 2015 The Authors. Published by Wolters Kluwer Health, Inc. on behalf of The American Society of Plastic Surgeons. All rights reserved. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 License, where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially.

Plast Reconstr Surg Glob Open 2015;3:e292; doi:10.1097/GOX.000000000000256; Published online 16 January 2015.

DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article. The Article Processing Charge was paid for by the authors.

REFERENCES

1. Husseman J, Mehta RP. Management of synkinesis. *Facial Plast Surg*. 2008;24:242-249.
2. Guerrissi JO. Selective myectomy for postparetic facial synkinesis. *Plast Reconstr Surg*. 1991;87:459-466.