

## SPECIAL ARTICLE COVID-19

# Is Early Traumatic Facial Nerve Surgery a Priority during the COVID-19 Pandemic?

Mohammad Faramarzi<sup>1,2</sup> Ali Faramarzi<sup>2,3</sup> Milad Hosseinialhashemi<sup>1,3</sup><sup>1</sup> Department of Otorhinolaryngology-Head and Neck Surgery, Shiraz University of Medical Sciences, Shiraz, Iran<sup>2</sup> Otolaryngology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran<sup>3</sup> Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran**Address for correspondence** Ali Faramarzi, Medical Student, Otolaryngology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran 71348-14336 (e-mail: ali\_faramarzi@sums.ac.ir).

Int Arch Otorhinolaryngol 2021;25(2):e177–e178.

**Abstract**

As otolaryngologists are exposed to high risk of coronavirus disease 2019 (COVID-19) infection, logic and evidence-based prioritization for surgeries is essential to reduce the risk of infection amongst healthcare workers. Several clinical guidelines and surgery prioritizing recommendations have been published during the COVID-19 pandemic. They recommended the surgery in the setting of immediate facial nerve paralysis within 72 hours after trauma, but none of the previous studies in the literature suggests that the optimal timing of operation should be less than 2 weeks from injury.

**Keywords**

- ▶ facial nerve
- ▶ COVID-19
- ▶ pandemic

Dear Editors,

Recently, two prioritizing recommendations on otologic surgeries during the coronavirus disease 2019 (COVID-19) pandemic have been published. Topsakal et al. recommended that the appropriate time for facial nerve decompression after temporal bone trauma is within 48 to 72 hours of the injury.<sup>1</sup> Also, in the clinical guideline from the Royal College of Surgeons of England and the ENT UK, at the request of the National Health Service (NHS) England, it is suggested that the time for the operation should be within 72 hours from trauma.<sup>2</sup>

A literature review shows that there is controversy about the timing and indication of surgical intervention after temporal bone trauma. Some experts believe that patients with more than 90 to 95% of facial nerve degeneration, confirmed by electroneurography (ENoG), are suitable candidates for facial nerve decompression,<sup>3,4</sup> while other studies claimed that early decompression is more likely to result in better facial nerve function. A

systematic review of 6 studies showed that early facial nerve decompression before 2 weeks after temporal bone trauma leads to better results than late surgical intervention.<sup>5</sup> In another study, Hato et al. found that facial nerve operation within 2 weeks from injury leads to significantly better recovery, whereas if performed 2 months after temporal bone trauma, it results in unfavorable outcomes.<sup>6</sup>

Conversely, there are those who believe that delayed decompression, even up to 3 months after trauma, may lead to acceptable facial nerve function.<sup>7</sup> Yadav et al. stated that conservative management, even up to 3 months, in patients with complete facial nerve paralysis is justifiable even if the ENoG and nerve excitability testing (NET) suggest poor prognosis. Hence, they concluded that it surgical intervention it is justified to postpone surgical intervention for up to three months even in patients with facial nerve degeneration > 90%. They also found that about 50% of patients with ENoG > 90% have acceptable facial

received  
September 21, 2020  
accepted  
December 7, 2020  
published online  
March 15, 2021

DOI <https://doi.org/10.1055/s-0041-1724089>.  
ISSN 1809-9777.

© 2021. Fundação Otorrinolaringologia. All rights reserved.  
This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial-License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)  
Thieme Revinter Publicações Ltda., Rua do Matoso 170, Rio de Janeiro, RJ, CEP 20270-135, Brazil

nerve recovery *via* conservative management.<sup>7</sup> In a prospective cohort study by Thakar et al., from 2018, 28 patients with head injury associated with complete unilateral facial nerve paralysis with poor ENoG outcomes received a high dose of prednisolone (1 mg/kg) for 3 weeks. Interestingly, all the patients had full recovery of facial nerve function after 20 weeks of conservative management. They concluded that surgical exploration should be considered only if there was no facial nerve recovery 4 months after temporal bone trauma.<sup>8</sup>

The current COVID-19 pandemic has imposed global changes in team dynamics, department workload organization, personal protective equipment (PPE) measures, and facilities preparedness.<sup>9</sup> Due to the exposure of otolaryngologists to patient's aerosols, they are at the forefront of the battle against COVID-19, with greater risks of infection.<sup>10</sup> However, the use of PPE may affect the surgical team members' performance. A survey by Benítez et al. shows that surgeons perceived impediment in both visibility and communication while using PPE on emergency surgery in COVID-19 patients.<sup>11</sup> Also, an international study shows that a considerable portion of surgical team members had not received training in the use of PPE for airborne infectious risk.<sup>12</sup> Therefore, it is time for rethinking and rescheduling elective surgical procedures.

Logic and evidence-based prioritization for surgeries is essential to reduce the risk of infection amongst healthcare workers, in addition to reducing the risks of patient's contamination within healthcare facilities.<sup>13</sup> On the other hand, the study by Lei et al. showed that patients undergoing surgeries during the incubation period of COVID-19 infection have higher risk of postoperative intensive care unit admission or even death<sup>14</sup>; hence, surgeons should consider this risk factor during the current pandemic. In conclusion, surgeons should ponder two issues before decision making. First, none of the reviewed literature recommended the timing of operation of less than 2 weeks. Secondly, the body of evidence is inconclusive for facial nerve surgery not only within 72 hours but also within 2 weeks. Hence, surgeons should be cautious with respect to the aforementioned recommendations for prioritized facial nerve surgery during the COVID-19 pandemic.

#### Author Contributions

Concept – M. F.; supervision – M. F.; resources – A. F. and M. H.; literature search – M. F., A. F., and M. H.; writing of the manuscript – M. H. and A. F.; critical review – M. F.

#### Conflict of Interests

The authors have no conflict of interests to declare.

#### References

- 1 Topsakal V, Van Rompaey V, Kuhweide R, et al. Prioritizing otological surgery during the COVID-19 Pandemic. *B-ENT* 2020. Doi: 10.5152/B-ENT.2020.20126
- 2 Clinical guide to surgical prioritisation during the coronavirus pandemic (ENT specific) [Internet]. [cited 2020 Aug 7]. Available from: <https://www.entuk.org/clinical-guide-surgical-prioritisation-during-coronavirus-pandemic-ent-specific>
- 3 Liu Y, Han J, Zhou X, et al. Surgical management of facial paralysis resulting from temporal bone fractures. *Acta Otolaryngol* 2014; 134(06):656–660 <https://pubmed.ncbi.nlm.nih.gov/24665853/> [cited 2020 Jul 8] [Internet]
- 4 Darrouzet V, Duclos JY, Liguoro D, Truilhe Y, De Bonfils C, Bebear JP. Management of facial paralysis resulting from temporal bone fractures: Our experience in 115 cases. *Otolaryngol Head Neck Surg* 2001;125(01):77–84 <https://pubmed.ncbi.nlm.nih.gov/11458219/> [cited 2020 Jul 8] [Internet]
- 5 Xie S, Wu X, Zhang Y, Xu Z, Yang T, Sun H. The timing of surgical treatment of traumatic facial paralysis: a systematic review [Internet]. Vol. 136, *Acta Oto-Laryngologica* Taylor and Francis Ltd; 2016 [cited 2020 Jul 8], p. 1197–200. Available from: <https://pubmed.ncbi.nlm.nih.gov/27387924/>
- 6 Hato N, Nota J, Hakuba N, Gyo K, Yanagihara N. Facial nerve decompression surgery in patients with temporal bone trauma: analysis of 66 cases. *J Trauma* 2011;71(06):1789–1792, discussion 1792–1793
- 7 Yadav S, Panda NK, Verma R, Bakshi J, Modi M. Surgery for post-traumatic facial paralysis: are we overdoing it? *Eur Arch Otorhinolaryngol* 2018;275(11):2695–2703. Doi: 10.1007/s00405-018-5141-y
- 8 Thakar A, Gupta MP, Srivastava A, Agrawal D, Kumar A. Nonsurgical Treatment for Posttraumatic Complete Facial Nerve Paralysis. *JAMA Otolaryngol Head Neck Surg* 2018;144(04):315–321 <https://pubmed.ncbi.nlm.nih.gov/29470563/> [Internet]
- 9 Benítez CY, Pedival AN, Talal I, et al. Adapting to an unprecedented scenario: surgery during the COVID-19 outbreak. *Rev Col Bras Cir* 2020;47:e20202701. Epub August 12, 2020. Doi: 10.1590/0100-6991e-20202701
- 10 Lima DS, Ribeiro Junior MF, Vieira-Jr HM, Campos T, Saverio SD, Saverio SD. Alternatives for establishing a surgical airway during the COVID-19 pandemic. *Rev Col Bras Cir* 2020;47:e20202549. Epub 03 de junho de 2020. Doi: 10.1590/0100-6991e-20202549
- 11 Yáñez Benítez C, Güemes A, Aranda J, et al; International Cooperation Group on PPE and Emergency Surgery. Impact of Personal Protective Equipment on Surgical Performance During the COVID-19 Pandemic. *World J Surg* 2020;44(09):2842–2847. Doi: 10.1007/s00268-020-05648-2
- 12 Yáñez Benítez C, Ribeiro MAF Jr, Alexandrino H, et al. International cooperation group of emergency surgery during the COVID-19 pandemic. *Eur J Trauma Emerg Surg* 2020;•••. Doi: 10.1007/s00068-020-01521-y
- 13 Couloigner V, Schmerber S, Nicollas R, et al; French Society of Otorhinolaryngology, Head, Neck Surgery (SFORL) French College of Otorhinolaryngology, Head, Neck Surgery French Syndicate of ENT Specialists (SNORL) COVID-19 and ENT Surgery. *Eur Ann Otorhinolaryngol Head Neck Dis* 2020;137(03):161–166 <https://pubmed.ncbi.nlm.nih.gov/32362564/> [cited 2020 Aug 7] [Internet]
- 14 Lei S, Jiang F, Su W, et al. Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection. *EClinicalMedicine* 2020;21:100331