

Telemedicine in Otorhinolaryngological Practice during COVID-19 Pandemic

Titus Sunday Ibekwe¹, Ayotunde James Fasunla²

¹Department of Otorhinolaryngology, University of Abuja and University of Abuja Teaching Hospital, Abuja, Nigeria, ²Department of Otorhinolaryngology, University College Hospital and University of Ibadan, Ibadan, Oyo State, Nigeria

Abstract

Coronavirus-19 pandemic has impacted significantly on global social, economic, financial, and health institutions. Otolaryngologic (ORL) practice has also been affected by the scourge with the need for modification of practice. The risks of contracting COVID-19 with the regular “patient–doctor physical contact” method of management of cases in ORL practice are high, given the routine examination of nose and throat. The desirability of telemedicine in the handling of most patients is appealing despite the limitations in the technology, especially in the developing countries like Africa. Therefore, otorhinolaryngologists in Sub-Saharan Africa, within limits of applicability, should leverage on telemedicine in their clinical practice during this COVID-19 pandemic and beyond. COVID-19, being a disease of second chance, has provided us with the opportunity to harness this technologically driven method of supportive care in our clime.

Keywords: COVID-19, otolaryngology, telemedicine

INTRODUCTION

Coronavirus-19 pandemic has impacted significantly on global social, economic, financial, and health institutions.¹ Otolaryngologic practice has also been affected by the scourge with the need for modification of practice. The situation is not different in Sub-Saharan Africa countries, most especially Nigeria. In the period of pandemic, telemedicine has the potential to alter the manner in which otorhinolaryngology is practiced at primary, secondary, and tertiary levels of healthcare.

RISKS AND PREVENTIONS

COVID-19 is a highly contagious disease known to be transmitted through droplets from infected individuals on the conjunctiva and mucous membrane of the oral and nasal cavities.^{2,3} Certain specialties are most vulnerable to exposure and risk of contracting COVID-19, given their anatomical area of assessments. Evidence has shown that the otorhinolaryngologist is one of the most-at-risk physicians given their wide routine exploration of the throat, nose, ears, face, and the head and neck.⁴ The antecedent vulnerability to droplets from the patients is obvious. One of the proven precautionary practices to contain spread of the novel

coronavirus infection is physical distancing. Therefore, the usual face-to-face clinic consultation is to be modified during the pandemic in order to control, prevent, and curtail transmission or spread of the infection. An alternative medical consultation method which will prevent physical contact but still provide remote satisfactory clinical service (remote doctor–patient consultation) and effective medical outcomes is desirable. This platform is robustly presented by telemedicine. Medical personnel can utilize the audio-visual real-time tools to assess their patients from the comforts of their homes. This will limit mass movement of the ill and their caregivers to the hospital, thereby preventing crowding which is inimical toward curtailing the spread of COVID-19.

Otorhinolaryngology is a specialty where instruments are frequently employed to visualize structures within the ears and

Address for correspondence: Prof. Titus Sunday Ibekwe,
Department of Otorhinolaryngology, University of Abuja Teaching Hospital,
Gwagwalada, PMB 228, Abuja, Nigeria.
E-mail: titus.ibekwe@uniabuja.edu.ng

Submitted: 04-Jun-2020 **Revised:** 08-Jun-2020

Accepted: 10-Jun-2020 **Published:** 04-Jul-2020

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Ibekwe TS, Fasunla AJ. Telemedicine in otorhinolaryngological practice during COVID-19 pandemic. *Niger Med J* 2020;61:111-3.

Access this article online

Quick Response Code:



Website:
www.nigeriamedj.com

DOI:
10.4103/nmj.NMJ_201_20

upper aerodigestive tract. Occasionally, clinical diagnosis is confirmed based on the evaluation of live images, radiologic images, and audiologic data. This information can be transmitted through smartphones and computers with internet connectivity to provide unique opportunities for remote review, diagnosis, and treatment, especially during the pandemic. Telemedicine has been employed to manage patients not in direct physical contact with a specialist or in situations where there is no specialist on site to manage diseases.⁵⁻⁷ However, its use in otorhinolaryngologic practice is with limited experience. Otolaryngology is well positioned to take advantage of telemedicine (tele-otorhinolaryngology).⁸⁻¹⁰ These benefits are beyond coronavirus pandemic and may include increased health accessibility, avoidance of unnecessary visits to doctors in hospital, saving costs of transportation and unnecessary health expenditure, and efficient use of specialist resources. However, the diagnostic telemedicine is still largely in its development stage, with formidable handicaps in the areas of reimbursement, legislation, and malpractice issues yet to be overcome with exemption of teleradiology.¹¹⁻¹³

APPLICATION OF TELEMEDICINE IN OTORHINOLARYNGOLOGY

Telemedicine has a wide application with promising values in otorhinolaryngological practice, ranging from remote clinical consultation to disease management.⁸⁻¹⁰ With availability of smartphones, laptops, and improved internet coverage, patients can now make remote audio-visual consultations with otorhinolaryngologists. When necessary, clinical photographs, radiological images, audiometric data, and laboratory results can be sent via internets and fax to otorhinolaryngologist to help make informed diagnosis. Under suitable technical and clinical conditions, remote interactive fiber-optic nasopharyngolaryngoscopy and video-otoscopy can be used to evaluate a range of commonly occurring pathologies with a high degree of reliability.¹⁴⁻¹⁶ Medical treatment can then be prescribed, where surgical intervention is not needed, with desirable outcomes. Patients have reported satisfaction with remote medical treatment, especially with access and perceived quality of care.¹⁷

CHALLENGES

The set back to telemedicine in Africa may hinge on our level of development, since about 60%–70% of our populace are still rural,¹⁸ with challenges of internet network connectivity and affordability of smartphones. However, capturing those who are compliant and amenable to telemedicine will surely reduce the pressure on patients and physicians. It would also reduce congestion to the health facilities and promote physical distancing needed for containment of COVID-19 pandemic. Further, as more people come to appreciate, telemedicine services from successful practice more are likely to embrace it.

Furthermore, some specific examinations are only possible with equipment such as flexible pharyngolaryngoscopes and

video-otoscopes, which can only be accessed on physical visits to the hospitals. Currently, they are not supported by remote telemedicine. It is hoped that in the near future with advances in technological know-how, some self-assessment apps will be developed for tele-otolaryngology for these examinations.

CONCLUSION

Otorhinolaryngologists in Sub-Saharan Africa, within limits of applicability, should leverage on telemedicine in their clinical practice during this COVID-19 pandemic and beyond to manage patients with ear, nose, and throat diseases. COVID-19, being a disease of second chance, has provided us with the opportunity to develop this technologically driven method of supportive care in our clime.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, *et al*. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *Int J Surg* 2020;78:185-93.
- World Health Organization. Mode of Transmission of Virus Causing COVID-19: Implications for IPC Precaution Recommendations; 27 March, 2020. Available from: https://apps.who.int/iris/bitstream/handle/10665/331601/WHO-2019-nCoV-Sci_Brief-Transmission_modes-2020.1-eng.pdf. [Last accessed on 2020 Jun 01].
- van Doremalen N, Bushmaker T, Morris DH, Holbrook MG, Gamble A, Williamson BN, *et al*. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. *N Engl J Med* 2020;382:1564-7.
- Lu D, Wang H, Yu R, Yang H, Zhao Y. Integrated infection control strategy to minimize nosocomial infection of coronavirus disease 2019 among ENT healthcare workers. *J Hosp Infect* 2020;104:454-5.
- Bashshur RL, Shannon GW, Smith BR, Alverson DC, Antoniotti N, Barsan WG, *et al*. The empirical foundations of telemedicine interventions for chronic disease management. *Telemed J E Health* 2014;20:769-800.
- Parmar P, Mackie D, Varghese S, Cooper C. Use of telemedicine technologies in the management of infectious diseases: A review. *Clin Infect Dis* 2015;60:1084-94.
- Hollander JE, Carr BG. Virtually perfect? Telemedicine for COVID-19. *N Engl J Med* 2020;382:1679-81.
- Pollock K, Setzen M, Svider PF. Embracing telemedicine into your otolaryngology practice amid the COVID-19 crisis: An invited commentary. *Am J Otolaryngol* 2020;41:102490.
- Meng X, Dai Z, Hang C, Wang Y. Smartphone-enabled wireless otoscope-assisted online telemedicine during the COVID-19 outbreak. *Am J Otolaryngol* 2020;41:102476.
- Setzen M, Svider PF, Pollock K. COVID-19 and rhinology: A look at the future. *Am J Otolaryngol* 2020;41:102491.
- Smits HL, Baum A. Health care financing administration (HCFA) and reimbursement in telemedicine. *J Med Syst* 1995;19:139-42.
- Granade PF, Sanders JH. Implementing telemedicine nationwide: Analyzing the legal issues. *Defense Counsel J* 1996;63:72.
- Franken EA Jr., Berbaum KS, Smith WL, Chang PJ, Owen DA, Bergus GR. Teleradiology for rural hospitals: Analysis of a field study. *J Telemed Telecare* 1995;1:202-8.
- Sebothoma B, Khoza-Shangase K. A comparison between video otoscopy and standard tympanometry findings in adults living with human immunodeficiency virus (HIV) in South Africa. *S Afr J Commun Disord* 2018;65:e1-7.

15. Brant JA, Leahy K, Mirza N. Diagnostic utility of flexible fiberoptic nasopharyngolaryngoscopy recorded onto a smartphone: A pilot study. *World J Otorhinolaryngol Head Neck Surg* 2018;4:135-9.
16. Ibekwe TS, Adeosun AA, Nwaorgu OG. Quantitative analysis of tympanic membrane perforation: A simple and reliable method. *J Laryngol Otol* 2009;123:e2.
17. Polinski JM, Barker T, Gagliano N, Sussman A, Brennan TA, Shrank WH. Patients' satisfaction with and preference for telehealth visits. *J Gen Intern Med* 2016;31:269-75.
18. Reed HE, Mberu BU. Capitalizing on Nigeria's demographic dividend: Reaping the benefits and diminishing the burdens. *Etude Popul Afr* 2014;27:319-30.