Changes in Clinical Practice amongst Nepalese Otolaryngologists during COVID-19 Pandemic

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ABSTRACT

Background

COVID-19 pandemic changed clinical practices more so for otolaryngologists due to inevitable risk of exposure.

Objective

To assess the changes in the clinical practice among Nepalese otolaryngologists during this pandemic.

Method

It was an observational study conducted as an online survey in the first two weeks of December 2020. A questionnaire pertaining to changes in clinical practice was mailed to 190 registered otolaryngologists working in various provinces of Nepal. Data were entered in Microsoft Excel 2007 and analysed in percentages.

Result

Out of the 77 (40.5%) who responded, nearly 50% resumed clinical practice after a month of national lockdown restarting everyday consultation by 64.9% mostly in hospital setting (81.8%) after screening patients via fever clinic by 87%. Modifications in clinical examinations was mostly done for neck (85.7%), oral cavity (44.2%) and nose (29.8%) examination with least with for ear examination (3.9%) Regular endoscopic evaluation was avoided by 19.4%. Only around 57% used adequate personal protective equipment. There was 93.5% reduction in elective operations. Mandatory COVID test was done by 89.6% mostly with reverse transcriptase polymerase chain reaction (95.9%) prior to semi-urgent case.

Conclusion

Changes in clinical practice were adapted to mitigate viral transmission. The changes were evident in the outpatient department where most patients were screened for fever and modifications made in the clinical examinations. Personal protective equipments were worn when available. Operative lists were limited to semi-urgent and urgent cases with covid testing customarily done for semi-urgent cases.

KEY WORDS

Aerosols, COVID-19, Otolaryngologists, Pandemic

INTRODUCTION

COVID-19 was declared a pandemic by World Health Organisation (WHO) on March 11, 2020, after it spread globally since its initial detection in China in December of 2019.[1] Nepal registered its first case on January 13, 2020, a returnee from Wuhan, China.[2] As cases increased a country-wide lockdown was enforced from March 24, 2020.

The upper respiratory tract is the main reservoir for the Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus which is transmitted through respiratory droplets and direct contact.[3,4] Otolaryngologists routinely examine and operate on the upper aerodigestive tracts hence are at high risk of contracting the disease.[5]

The contagious nature of this disease thus brought drastic changes in routine clinical practice and setup.[6] The study was aimed to assess the changes in the clinical practices amongst Nepalese otolaryngologists due to this pandemic.

METHODS

This was an observational study carried out as an online survey in the first two weeks of December 2020, targeting 190 registered otolaryngologists of the Society of Otolaryngologists of Nepal (SOL Nepal), working in medical college hospitals, government, and private hospitals spread over all seven provinces of Nepal. The survey was started on 1st December 2020 with reminders sent twice before determining no further response would be obtained. Ethical approval was obtained from the institutional review committee of the Institute of medicine (129(6-11)E2077/078). The participants were given the option of providing digital consent by selecting the designated box before taking the survey. The survey included a questionnaire consisting of 28 close ended questions made in Google form. The initial part of the questionnaire dealt with the demographics of the respondents and their working facility without the need to reveal personal information. The remainder focussed on the Out-patient Department (OPD) services, provision of fever clinics, use of personal protective equipment (PPE) during consultations, changes in ear, nose, throat (ENT) examinations, and types of surgeries performed. The questionnaire was approved by five currently practicing otolaryngologists before the survey. Otolaryngologists not registered as member of SOL Nepal and ENT residents were excluded from the study.

The sample size was calculated using the formula

$n = Z^2 \times p \times q / e^2$

$= (1.645)^2 \times 0.5 \times 0.5 / (0.1)^2$

$= 67.6$

where,

n= minimum required sample size

Z= 1.645 at 90% Confidence Interval (CI)

p= prevalence 50% for maximum sample size

q= 1-p

e= margin of error, 10%

Taking 10% non-response rate, the total minimum sample size was 75. The non-response was considered owing to change in email address, unwillingness to participate in the survey due personal disinterest or lack of time to complete the survey. Microsoft Excel was used for data entry and analysis. The data was calculated in percentages.

RESULTS

Out of 190, 77 responded amounting to a response rate of 40.5%. The majority of the responders were male (72.7%) and had been involved in otolaryngology practice for less than 5 years (40.3%). They represented medical college hospitals, government and private hospitals in almost similar percentages. About 90% of the respondents were aware of the advisory on patient care during the pandemic released by SOL Nepal on June 23, 2020. Out of 77, 16 (20.8%) clinicians had tested positive for COVID-19. Similarly, about 57% had undergone quarantine after treating or operating on the COVID-19 patients (Table 1).

Table 1. Characteristics of respondents (n=77)

Attribute		n (%)
Gender	Male	56 (72.7)
	Female	21 (27.3)
Years of ENT practice	< 5 years	31 (40.3)
	5-10 years	22 (28.6)
	11-15 years	13 (16.9)
	> 15 years	11 (14.3)
Types of hospitals	Medical college hospitals	35 (45.5)
	Government hospitals	27 (35.0)
	Private hospitals	15 (19.5)
Aware of SOL Nepal advisory	Yes	69 (89.6)
	No	8 (10.4)
Tested positive for COVID-19	Yes	16 (20.8)
	No	61 (79.2)
Quarantined after treating suspected or positive patient	Yes	44 (57.1)
	No	33 (42.9)

Nearly half of the clinicians started their clinical practices immediately or within a month of the national lockdown whilst a quarter of them resumed practice either between one to three months or after three months. Consultations were done everyday by about 65% while others preferred less frequent consultations. These services were provided in the hospital settings itself in nearly 82%. The remaining 18 % used virtual modes also (Table 2).

About 55% of clinicians used scrubs during hospital visits. About a quarter of them wore regular clothes

Table 2. Clinical Practices during the COVID-19 Pandemic (n=77)

Consultation		n (%)
Resuming clinical practice after lockdown	Continuous or within a month	38 (49.3)
	1-3 months	19 (24.7)
	More than 3 months	20 (26.0)
Frequency of consultation services	Everyday	50 (64.9)
	Alternate day	13 (16.9)
	Once a week	11 (14.3)
	On-call basis	3 (3.9)
Consultation service	Hospital setting	63 (81.8)
	Telemedicine/ Telephone	2 (2.6)
	Combined (Hospital setting and Telemedicine or Telephone)	12 (15.6)

Table 3. Attire and PPE (n=77)

		n (%)
Attire during a hospital visit	Scrubs	42 (54.5)
	Regular clothes for hospital use only	17 (22.1)
	Regular clothes	18 (23.4)
PPE used during consultation	As per WHO guidelines	43 (57.3)
	WHO Guidelines – not followed	32 (42.7)
Training on donning and doffing of PPE	Yes	43 (55.8)
	No	34 (44.2)
PPE arrangement in OPD/ Operation theatre	Hospital	44 (57.1)
	Self-Purchased	11 (14.3)
	Social organizations	3 (3.9)
	Multiple sources (Hospital, social organizations, self- purchased)	19 (24.7)

specifically meant for hospital visits (22.1%) whilst a similar percentage (23.4%) wore regular clothes as usual. The WHO recommendation of a minimum of medical mask/ respirators, gowns/aprons, protective gloves, and eye protection (goggles or face shield) was followed by 57.3% of clinicians. However, the remaining 42% either did not use gowns or protective gloves. About 56% received training on donning and doffing of PPE. PPE was provided by hospitals in about 57% whilst 14.3% had to self-purchase (Table 3).

Only 17% always had patients screened in fever clinics before ENT consultation whilst a majority (70%) followed it inconsistently. Nearly 69% of respondents adopted some measures to reduce the risk of viral transmission in OPD/ Clinics. These measures consisted of prior appointment, limiting the patient number, social distancing, hand-wash/ hand sanitising facility, mandatory mask for all, avoidance of visitor(s) in OPD room, and limiting follow-ups. There was no response from 31% regarding these measures. Except for ear examination, the majority examined the nose, throat, and neck with modifications to avoid direct exposure. Nearly 95% of clinicians followed hand hygiene either with soap water or alcohol-based hand sanitizer

Table 4. Measures adopted to reduce exposure in OPD (n=77)

		n (%)
Screening through fever clinic	Always	13 (16.9)
	Sometimes	54 (70.1)
	Never	10 (13)
Ear examination	Using Otoscope	74 (96.1)
	Using Oto-endoscope	2 (2.6)
	Treat symptomatically without examination	1 (1.3)
Nose examination	Anterior Rhinoscopy	52 (70.2)
	Inspection with patient lifting his/her nose tip	20 (27.1)
	Using endoscope with monitor	2 (2.7)
Oral cavity examination	Using tongue depressor	43 (55.8)
	Inspection only with patient's mouth open	29 (37.7)
	Using endoscope with monitor	4 (5.2)
	Treat symptomatically without examining	1 (1.3)
Neck examination	Patients facing away from clinician	66 (85.7)
	Patient facing the clinician	11 (14.3)
Hand hygiene after every consultation	Yes	73 (94.8)
	No	4 (5.2)
Performing ENT endoscopy	Yes	60 (77.9)
	Selected cases only	2 (2.5)
	No	15 (19.4)

after each consultation. Regular endoscopic evaluation were carried out by 77.9% of specialists (Table 4).

Almost 71% of the respondents were performing less than 25% of their pre- COVID-19 operating list load. About 63% performed only emergency and semi-urgent cases while 3.9% performed none. Pre-operative mandatory test for COVID-19 was done by about 90% mostly by Reverse transcriptase polymerase chain reaction (RT PCR) (96%). Thirty percent of the respondents operated on the COVID-19 positive patients (Table 5).

DISCUSSION

Since COVID-19 became pandemic, the health care system worldwide changed considerably to adapt to contain the spread of SARS-CoV-2 with Nepal being no different in this context especially for the otolaryngology fraternity; the most at-risk specialty.

This study was conducted to provide insight into the changes in the otolaryngology clinical practice brought by the pandemic. An online survey involving all registered members of Society of Otolaryngologists of Nepal was done so the information obtained could be representative of all seven provinces of Nepal. The survey was completed by 77 (40.5%) of the members, slightly less than that conducted

Table 5. ENT surgeries during COVID-19 (n=77)

		n (%)
Operating list compared to pre- COVID-19 period	Almost similar	5 (6.5)
	About half (25-50%)	14 (18.2)
	Less than 25%	55 (71.4)
	None	3 (3.9)
Types of surgeries performed	Emergency & semi-urgent cases only	49 (63.6)
	Elective &emergency cases	25 (32.5)
	None	3 (3.9)
Mandatory COVID-19test before surgery	Yes	69 (89.6)
	No	8 (10.4)
Test done to detect COVID-19 (n=73)	RT- PCR	70 (95.9)
	Rapid diagnostic test (Antibody test)	3 (4.1)
Operated on COVID-19 patient?	Yes	23 (29.9)
	No	54 (70.1)

in Italy with a response of 52% but higher as compared to about 20% response in a similar nationwide surveys.[7-9]

Nearly 85% of respondents had ENT practice of less than 15 years representing the younger generation of practitioners with majority (72.7%) being males. This was not surprising as younger practitioners were more likely to be frontliners involved in direct patient care. Healthcare personnel above 60 years and those with comorbidities were considered more susceptible and hence recommended to be waived from the frontline duties.[9,10]

In a national survey amongst otolaryngologists in Czech Republic in the initial months of the pandemic, 80% of them perceived being at high risk of contracting COVID-19.[9] Otolaryngologists were considered at high risk even when performing routine procedures.[3,5,11] By the time this survey was completed when the first wave was subsiding in Nepal, 20% of the respondents had already tested positive for COVID-19 and 57% had to quarantine at least once. This resonated with the situation seen in Italy where 20% of the otolaryngologists had tested positive by the end of April 2020 in a national survey.[7]

There was hesitation in starting services after the national lockdown imposed on March 24, 2020 with only about 50% resuming work within a month of the lockdown. This probably resulted from the enigma related to the virus in the initial days. By May 2020, as many as 175 guidelines pertaining exclusively to ENT practices were available worldwide with Society of Otolaryngologists of Nepal following suit which on June 23, 2020 was endorsed by Nepal Medical Council.[5,12] About 90% of the respondents were aware of this SOL Nepal guideline. Availability of a local guideline probably lead a quarter more clinicians to resume work after three months of lockdown. As per Marchioni et al. prompt implementation of strict local protocol for ENT department in an Italian hospital in the initial months of the first wave proved effective in providing essential services and also curbing spread of infection.[13]

After resuming work, about 65% of respondents provided OPD services everyday with others providing services less frequently. About 82% resorted to physical consultation in a hospital setting while some clinicians (18%) relied on virtual consultations via telemedicine or telephone. These alternative methods were considered good for non-urgent cases, as they could be sorted within the confines of the patient's home hence avoiding the need and the anxiety associated with hospital visit due to fear of contracting the disease.[4,6,11,14] Such methods helped triage those needing early hospital visit and avoiding non-urgent hospital visits.[15,16] Marchioni et al. also resorted to physical consultations to only those needing urgent medical attention namely oncology cases or those requiring investigations within 10 days with postponement of all non-urgent visit.[13] Telephonic consultations were done to monitor those showing symptoms of upper respiratory tract infection and likely to need hospitalisation. Such strategy resulted in reduction in number of patients visiting the hospital. A nationwide survey conducted in April 2020 in Italy, reported 80.4% reduction in OPD visits.[7] Chan et al. in Hong Kong noted a reduction in daily patient visits by more than 50% due to public fear and also reduction in elective clinics and surgeries.[11] A hospital in Wuhan, China ran the emergency services as normal however, the number of emergency room visits reduced to two-thirds of the corresponding period a year before. Similarly, there was only 20% cases in the outpatient department as compared to the previous year.[17]

The highly infectious nature of the disease warranted the use of adequate infection control measures.[3,6] Patients with initial symptoms of COVID-19 namely cough, sore throat, dyspnea, hyposmia/anosmia were likely to visit otolaryngologists.[4] In addition, carriers or patients in the incubation period could remain asymptomatic but still be contagious. So, it was recommended to examine all patients with unknown status of COVID-19 with full precaution during this pandemic.[6,11,18,19]

It is not customary to change to scrubs within hospital premises in Nepal. However, in this survey, more than 50% used scrubs in hospitals whilst 22% used regular attire but only for use in hospitals. Such measures were taken to avoid any risk of contamination at home.

To practice without adequate PPE is to keep the health of self and others at risk.[16] During the consultation, it was recommended to use full-sleeved fluid-resistant gowns/aprons, gloves, surgical masks, and/or respirators (KN95/N95/FFP2) and eye protection (safety goggles and/or face shield) as a bare minimum.[3,6,11,20,21] However; these recommendations were controversial in centres with inadequate PPE for all staff involved in patient care.[15] In our survey, about 57% were able to follow protection as set by

guidelines however the rest managed with lesser protection either due to unavailability. The PPE was provided by hospitals for about 60% of respondents only while others had to either buy themselves or received donations from social organisations. A mere 29% of the Czechoslovakian otolaryngologists reported easy availability of protective gears, disinfectants and sanitisers while the rest were deficient with one or more of these items.[9]

Proper handling of the PPE was also important to mitigate the risk of infection. Having a trained observer to check proper doffing technique resulted in no self-contamination as per Marchioni et al. in Italy.[13] In our survey, only slightly more than 50% had received training or demonstration on donning and doffing of PPE.

Modifications were recommended and implemented in the OPD setup and consultation to reduce the risk of infection.[4,6,11,20] One such measure was to screen patients for typical COVID-19 symptoms in fever clinics before ENT consultations.[17] In our survey, only 17% had the privilege of screening patients through a fever clinic. This could be because of a lack of resources and manpower. Other measures adopted included taking a prior appointment, reducing follow-ups, hand washing/hand sanitizer facilities for patients, mandatory face mask, no accompanying persons with the patient in the room unless indicated. These were followed by all those who responded while about 30% did not respond to this question. The ENT examination was also modified. The ear was examined by majority like pre- COVID-19 period however examination of the nose, oral cavity, and neck were modified by many, taking extra precautions to reduce direct exposure. There was no change in the technique of ENT examinations for those really needing hospital visit as per Marchioni et al. however examinations were carried out with adequate PPE by the examiner and the patients had to be masked during hospital visit.[13]

Endoscopic examination of the nose, pharynx, and airway, being a potentially aerosol-generating procedure, required full precautions to be taken.[3,11,22] Precautions like the use of a video monitor system, avoiding sprays instead using cotton pledgets soaked in vasoconstrictor and xylocaine, proper sterilisation of instruments after use, and vacating the room for about 3 hours were recommended.[3] It was recommended to be performed only if absolutely necessary.[4] In this survey, about 80% performed this procedure. The indications for the NPL were limited to airway emergencies, aero-digestive tract foreign bodies, head and neck trauma, epistaxis, and evaluation of patients with malignancy. About 75% performed it with special precautions while the rest used additional PPE also.

ENT surgeries are the most aerosol-generating procedures needing proper PPE. The scarcity of resources and adequately trained manpower had a profound effect on routine and urgent ENT surgeries.[23] Postponement of the routine, non-urgent ENT surgeries was one of the strategies to divert the resources where needed.[6,8,16,19] In our survey also, the vast majority of the otolaryngologists were operating on less than 25% of the cases compared to the pre- COVID-19 period. A similar trend was followed globally during this pandemic.[3] A study in France compared the total ENT surgeries in a month beginning mid-March in 2019 with that in the same period in 2020 in three university hospital located in area severely affected by COVID-19. A reduction by 84% of surgeries was reported although this did not affect the number of head and neck cancer surgeries.[24] Marchioni et al. in Italy also recounted postponing all routine ENT surgeries their centre but not compromising on the number of head and neck cancer surgery and emergency cases.[13] An Italian national survey found a decline in daycare surgery by nearly 90% and inpatient surgical procedures by 83%. This was reflected as suspension of all elective surgery, head and neck cancer surgery reduction by 10.7% and emergency surgery reduction by 3.5%. The effect on the cancer cases and emergency list could have resulted from national lockdown. In addition, some ENT units were temporarily closed whilst some were converted into COVID centres consequently limiting number of beds for ENT service and also transferring ENT staffs to other specialities with greater needs mostly internal medicine ICU, infectious diseases and emergency.[7]

To ensure the safety of the health care providers and to arrange appropriate protection, many centres took nasopharyngeal and oropharyngeal swab of patients for SARS CoV-2 before hospital admission.[19,23] In a survey amongst Italian otolaryngologists, 72.7% reported screening patients and healthcare workers.[26] In addition to the RT-PCR test, pulse oximetry and chest X-ray were done as screening test before hospital admission of patients with these tests being omitted in case of emergencies in a hospital in Italy. During the study period from March to May 2020, none of the ENT staffs (17 residents and 15 specialists) in this hospital showed symptoms of COVID-19 or tested positive when the pandemic was infact peaking around 1 April 2020. Repeated swab tests and adequate PPE for the medical personnels were also implemented.[13] As per our survey results, all patients underwent a mandatory pre-operative test for COVID-19 mostly by RT-PCR (90%) except for emergencies.

Based on this study, Nepalese otolaryngologists made changes in the clinical practice since the pandemic started. This study gave an overview of the changes however, excluding the ENT resident doctors, who were one of the key frontliners was its limitation. Including them could have further increased the response rate which could have led to a better understanding of the changed scenario.

CONCLUSION

The changes were evident in the outpatient department where most patients were screened for fever and modifications made in the clinical examinations. Personal protective equipments were worn when available. Operative lists were limited to semi-urgent and urgent cases with covid testing customarily done for semi-urgent cases. Such changes in clinical practice were adapted by Nepalese otolaryngologists to mitigate viral transmission like the rest of the world during this pandemic. Any similar health crisis in the future would mean, the health care system need to amended to as per the need.

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