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COVID-19

Management of Dysphagia in Nursing Homes During the COVID-19 Pandemic: Strategies and Experiences

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Abstract

The global 2019 novel coronavirus disease (COVID-19) pandemic has had devastating effects not only on healthcare systems worldwide but also on different aspects of the care provided to nursing home residents. Dysphagia management is a crucial component of the care provided to many nursing home residents. This article presents the dysphagia management strategies applied in Hong Kong during the COVID-19 pandemic and the related experiences. A two-tier protection system was implemented wherein residents were categorised according to their contact and hospitalisation histories. The provided swallowing management and personal protective equipment level differed between the two tiers. The article also discusses the referral and prioritisation of clinical services for residents requiring swallowing management, as well as the adaptations of swallowing assessment and management during the pandemic. The possible effects of COVID-19 on mealtime arrangements in nursing homes, the implications of the pandemic on the use of personal protective equipment and the use of telepractice in nursing homes were also discussed. This article has summarised the actions taken in this regard and may serve as a reference to clinicians who are responsible for swallowing assessments and dysphagia management in nursing homes.

Keywords Dysphagia · COVID-19 · Nursing home

Introduction

The World Health Organization (WHO) declared the 2019 novel coronavirus disease (COVID-19) to be a global pandemic in March 2020 [1]. COVID-19 has caused widespread devastation in communities worldwide, and even more significant increases in associated mortality in nursing homes relative to the surrounding communities [2]. Residents in nursing homes often have multiple health conditions and are therefore at a higher risk of mortality in a pandemic scenario. In the COVID-19 pandemic, this increased risk of mortality is not only due to the pandemic disease itself but also due to pre-existing medical conditions, regardless of the residents' COVID-19 infection status.

Dysphagia is a prevalent problem among nursing home residents. Previous studies have reported global prevalence rates ranging from 25 to 70% [3–5]. If neglected or mismanaged, dysphagia can lead to serious complications such as malnutrition, dehydration, aspiration pneumonia and death [6]. Dysphagia can be assessed using either non-instrumental or instrumental assessment methods. Clinicians rely largely on the former methods because the latter are rarely available in nursing homes. Non-instrumental assessment methods, which are also referred to as clinical swallow evaluations (CSE), include communication assessments, physical examinations and swallowing trials [7]. The physical examination in a CSE includes an assessment of the cranial nerves, voice and laryngeal function. In some protocols, the clinicians elicit a volitional cough from the patients to assess the airway protective mechanism [8, 9]. The swallowing management strategies that can be applied in nursing homes are less confined to the setting. For example, exercises of the oromotor and pharyngeal muscles can be performed [10]. Additionally, clinicians can apply surface electromyography, neuromuscular electrical stimulation and expiratory muscle strength training to the residents. Compensatory strategies such as dietary,

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environmental and utensil modifications are also commonly used [6]. Several of these procedures may induce coughing as a reflexive response to protect the airway.

The CSE was classified as medium risk according to stratification risk for COVID-19 transmission. The risk of the procedure is attributed by the close proximity to the residents' upper mucosa, prolonged exposure and possibility of reflexive cough during the procedures [11]. Compared with the general community, nursing home residents are at substantially higher risk for having bacterial and viral infections [12]. Healthcare workers (HCWs) have to provide care to many residents, which further increases the risk of cross-infection. Nursing home residents are also more prone to hospitalisation and thus face an increased risk of hospital-acquired infections, as well as exposure to novel viral agents such as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of COVID-19. The nature of these procedures also places clinicians at a risk of infection with SARS-CoV-2 during dysphagia assessments and management [13]. COVID-19 advisory group of Royal College of Speech and Language Therapists also presented that dysphagia assessment should be considered as an aerosol generating procedures based on theoretical and empirical evidences [14]. However, CSEs are crucial to the physical and psychological well-being of many nursing home residents, despite the risk of infection, and thus cannot be suspended. Below, some practical strategies and considerations regarding dysphagia management in nursing homes are described. These strategies have been applied in Hong Kong, one of the first regions affected by COVID-19 [1].

Two-Tier Protection

During the peak of the pandemic, nursing home personnel only included HCWs, residents and essential administrative staff. Although the loosening of public health policies in late May 2020 led to the reopening of schools and public facilities [15], visiting policy and visitor numbers at nursing homes remained restricted. Patients with COVID-19, individuals who had come in close contact with infected patients and patients under quarantine were not allowed to visit nursing homes. Individuals presenting signs and symptoms of COVID-19, including a fever, runny nose, loss of smell and taste and a travel history within the past 14 days, were also not allowed to enter nursing homes [16]. These restrictions protected residents by allowing only minimal contact with individuals outside the nursing home. In Hong Kong, COVID-19 testing efforts were restricted to approximately 2000 samples per day until June and were mainly targeted at travellers to Hong Kong and those admitted to hospitals [16]. In July 2020, there was an outbreak after relaxation of social distancing policy [17]. To date, cluster outbreaks in nursing homes have been reported in at least 4 local nursing homes. The re-emergence of the disease, which previously have been largely contained in the community, has affected nursing homes in this wave of outbreak and the following measures were more important to ensure the safety and well-being of nursing home residents.

Residents requiring dysphagia management were categorised as either 'standard' or 'at-risk'. The at-risk group included those who had been hospitalised within the past 14 days or had been diagnosed previously with COVID-19 and discharged. Residents who had been diagnosed with COVID-19 were assessed after discharged to the nursing home as patients with COVID-19 were considered at high risk for oropharyngeal dysphagia [18], especially those who have been previously intubated [19]. These at-risk residents were deescalated to the standard level after 14 days of quarantine in the facility. Therefore, standard and at-risk residents should be considered differently with respect to dysphagia assessments and management and personal protective equipment usage.

Referral and Prioritisation

Nursing home residents were referred by the medical doctors or nurses to undergo swallowing assessments and/or management or to receive routine assessment under an annual review of the integrated care plan. Two additional measures were enforced during the COVID-19 pandemic. For all referrals, the source was asked to indicate whether the nature was urgent or non-urgent. All standard-level residents were assessed and managed, whereas only the at-risk residents whose referrals were deemed urgent underwent assessments. The at-risk residents with non-urgent referrals were assessed after they deescalated to the standard level. In the latter cases, the Eating Assessment Tool 10 (EAT-10) [20] was applied by interviewing residents with the ability to communicate, and the EAT-10 score was computed. Those who received an EAT-10 score of 3 or higher proceeded to a swallowing assessment, while those with lower scores were deemed 'not at significant risk' and were seen at a later stage.

In addition to screening tools such as the EAT-10, clinicians also relied more heavily on the residents' medical records and histories when prioritising cases for assessment and management. Dementia, a severely dependent functional status, a high nutritional risk status and an underweight status were identified as risk factors for dysphagia in nursing home residents [21, 22]. Consequently, the residents' medical records were searched for these factors, and the residents were prioritised accordingly for assessment and management. The use of screening tools such as the EAT-10 and well-researched risk factors facilitated the decisions. Clinicians should keep in mind that this is far from ideal, but it is a balance between risk and clinical outcome [23].

Adaptation of the Clinical Swallow Evaluation

The CSE comprises several key components, including a physical examination and swallow trials. Cognition and dentition have been identified as indicators of dysphagia in elderly residents of aged care facilities [21]. Therefore, these two aspects were emphasised when determining the residents at a higher risk of dysphagia. An assessment of cognition and dentition would not require the clinician to be in close proximity of the patient and would not be an aerosol-generating procedure (AGP), unlike an oral motor examination and swallow trials [24]. Clinicians can reduce their risk of exposure by decreasing their involvement in the performance of AGPs. Some clinicians include volitional or reflexive coughing as a possible indication of aspiration during the CSE [9]. Some swallowing manoeuvres, such as the supraglottic swallow, also involve volitional coughing after swallowing to eliminate the aspirated bolus in the airway [7]. These practices are not advocated and should be avoided during a pandemic to reduce the risk of infecting the clinician during the AGP, as well as the risk of exposure of other residents if these manoeuvres were recommended to be performed during mealtimes.

In nursing homes, cervical auscultation may be used as an adjunct during a swallowing assessment [25]. During the COVID-19 pandemic, the use of a stethoscope across multiple patients was limited as much as possible to avoid cross-resident infection. Whenever a stethoscope was applied to a resident, it was thoroughly cleaned with alcohol wipes (70% ethanol content) at least three times before it was used on another patient. Similar disinfection procedures were used for pulse oximetry devices.

The use of utensils of different sizes, shapes and types is another compensatory strategy implemented in CSE and dysphagia management. During the COVID-19 pandemic, utensils and containers were largely switched to disposable options to reduce the risk of infection. Therefore, the use of utensils and containers as a compensatory strategy for dysphagia management may be limited in a pandemic setting.

Adaptation in Dysphagia Management

In addition to the limitations associated with utensils and manoeuvres, limitations were also placed on exercises or therapy options because of the COVID-19 pandemic. Although the use of sensory stimulation in clinical practice is not supported by solid evidence, it is nevertheless used by some clinicians [26]. The use of a cold and sour stimulant may trigger gagging and coughing responses, and clinicians must remain in close proximity to the patient during these procedures. Therefore, sensory stimulation is associated with a higher risk of infection. These practices were completely avoided in patients that were deemed at risk and generally avoided in residents at the standard level of care.

Expiratory muscle strength training (EMST) has been advocated to improve the swallowing functions of patients with dysphagia associated with different aetiologies [27, 28]. However, this procedure involves blowing air into the device, and this method and the difficulty associated with device disinfection made it necessary for clinicians to avoid prescribing EMST for at-risk patients. EMST was only applied to patients at a standard level of care, and they were advised to remain at a distance of at least 1.5 m from residents during the procedure.

Dysphagia management across the two-tiers of residents also differed; the at-risk residents were managed conservatively with diet modification and swallowing manoeuvres [29]. Direct treatments can be considered when these at-risk residents were deescalated to the standard level after the quarantine in the facility [12].

Effects of Mealtimes in Nursing Homes

In nursing homes, mealtimes normally involve a gathering of residents in a dining hall. Each resident would receive their meal on their own tray and would eat individually. The COVID-19 pandemic led some nursing homes to change this practice, after which residents were only allowed to eat meals in their own rooms or personal spaces. Other homes segregated residents into small groups and only allowed one small group to dine at a time. The lack of olfactory and visual stimulation associated with mealtimes in dining halls may have affected some of the feeding behaviours and patterns of residents, especially those with dementia [30]. Clinicians monitored these behaviours and intake amounts more closely once these changes had been implemented and made any necessary suitable arrangements to overcome the sensory deprivation and social isolation.

Personal Protective Equipment

The recommendations for nursing homes that assessed and managed patients at the standard level of care indicated that face masks and gloves should be considered the minimal level of personal protective equipment (PPE); if available, face shields should be used when interacting with all standard-level patients. In contrast, face shields and personal gowns should be used in addition to face masks and gloves when interacting with at-risk residents. All clinicians received proper training in infection control, which addressed the use of different forms of PPE and the standard procedures for donning and doffing these items according to training materials from the government website [16]. Hand hygiene was

advocated among clinicians and was required before and after visiting the patient and touching any of his/her belongings.

Use of Telepractice

Existing evidence supports the use of telepractice in dysphagia management. Studies on this approach have advocated the use of trained assistant personnel at a remote site to provide the service and achieve valid and reliable results [31, 32]. Some studies have used videoconferencing software to allow the clinician and patient to interact in real-time and to facilitate the provision of clinical services. Many nursing home residents do not have a sufficient cognitive level that would allow them to use electronic communication devices such as tablets independently. These residents would require assistance with device operation from another individual. Consequently, a surge in the use of telepractice for dysphagia management in nursing home settings was not observed during the COVID-19 pandemic. However, telepractice may be considered for older adults who live at home with caregivers who could provide assistance with device operation.

Conclusion

During the COVID-19 pandemic, nursing home residents were as vulnerable as any other population, given their already fragile state. However, members of this population still required swallowing assessments and dysphagia management, regardless of their COVID-19 status. However, many aspects were considered to minimise the risk of infection among residents and clinicians. This commentary has summarised the actions taken in this regard and may serve as a reference to clinicians who are responsible for swallowing assessments and dysphagia management. Clinicians should also remain aware of all changes to guidelines on dysphagia management [11, 12, 14], for nursing homes [33] or for certain clinical populations from other specialities [34].

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval and Informed Consent This article does not contain any studies with human participants performed by any of the authors.

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