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Guidelines on PPE for ENT procedures during COVID-19 in Singapore

COVID-19 has emerged as a global pandemic. Since the first case reported in Singapore in January 2020, COVID-19 now demonstrates significant transmission within the local community.

With emerging concerns amongst fellows and members that ENT procedures in the upper aero-digestive tract may pose a significant risk of viral transmission to the ENT surgeon, the Chapter ORL and SOHNSS jointly issue this guideline on the appropriate use of PPE when performing ENT procedures.

Background

Media reports from countries affected by COVID-19 suggest that ENT surgeons are at higher risk of infection compared to other specialities.¹

But initial anecdotal reports such as that of the single endoscopic trans-sphenoidal pituitary surgery in Wuhan causing 14 healthcare workers to get infected, probably overstated the risk, and have resulted in significant anxiety within the global ENT community.²

More careful review of these early reports, published in the emerging phase of the pandemic when good understanding of infectivity was not established, reveals that they may be other factors such as the lack of appropriate PPE and OT infection protocols more likely contributed to the high rate of infection seen.

Latest WHO guidelines and best level of evidence currently available tell us that COVID-19 is spread by droplet transmission, and the upper respiratory tract contains higher viral load.³ There is increasing evidence that infected individuals may remain asymptomatic and yet shed significant virus^{4,5}. Less commonly, an Aerosol-Generating Procedure (AGP) may generate smaller droplets that travel a greater distance, resulting in airborne transmission.⁶ Prime examples of AGPs include endotracheal intubation, CPAP, tracheostomy and bronchoscopy. Extrapolating from this, procedures such as nasoendoscopy, usage of endoscopic microdebriders and drills may also be AGPs. Until stronger evidence is available, caution should be used when undergoing upper respiratory tract procedures during this pandemic.

PPE for ENT Procedures

ENT procedures involving the mucosa of the upper aerodigestive tract may be aerosol generating procedures (AGPs). Based on WHO guidelines and in consultation with Chapter of Infectious Disease Physicians, the PPE recommended is a N95 mask (or FFP2 and its equivalent), fluid resistant gown, gloves, and eye protection. Surgical masks and N95 masks have been shown to be effective in preventing transmission of SARS (another coronavirus) in healthcare workers⁷, and should offer adequate



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protection even during AGPs.

Therefore, this PPE should be used in all ENT procedures which involve exposure to mucosa, including nasoendoscopy, septoplasty, turbinoplasty, sinus surgery, tonsillectomy, laryngeal surgery, tracheostomy and mastoidectomy.

Procedures such as myringoplasty and thyroidectomy with no mucosal exposure, and significantly lower potential for aerosol generation may be performed with just surgical mask, fluid resistant gown, gloves, and eye protection.

Standard precautions such as hand hygiene, proper fitting of N95 masks, the correct use and disposal of contaminated PPE are also crucial in infection control. Cleaning and disinfection of the environment and other frequently touched surfaces are highly recommended and the frequency should be increased during this pandemic as these surfaces may carry viral particles. WHO recommends the use of 70% ethyl alcohol for equipment and sodium hypochlorite at 0.5% (equivalent 5000ppm) for surfaces.

Further Recommendations

A widely believed route of COVID-19 infection is through mucosal surfaces, and this includes the conjunctiva of the eyes. The definition of eye protection may vary from safety glasses to face shields and even air-tight goggles. There is insufficient evidence regarding their relative superiority. However in procedures with a high risk of splash or aerosolisation, air-tight goggles can be considered.

Though scrub caps are not specifically mentioned in the WHO guidelines, the Chapter and Society recommend the use of scrub caps to avoid gross contamination of the hair during ENT procedures.

For confirmed COVID-19 positive or highly suspicious patients (meeting MOH criteria), it is recommended that ENT procedures be postponed until the patient has recovered or is no longer suspect. Nevertheless, if a procedure cannot be postponed for such patients, the addition of Powered Air-Purifying Respirators (PAPR) with shoe covers can be considered.

In a novel pandemic such as the COVID-19 global pandemic, the acquisition of new knowledge is quick. These recommendations are made on best available evidence at this current point in time. Recommendations on appropriate PPE may evolve with availability of new clinical and epidemiological data. The Chapter and Society urge its Fellows and members to stay constantly updated, and adapt PPE use as directed by emerging information during the course of the COVID-19 pandemic.

Lastly, the Chapter and Society would like to acknowledge the efforts of Dr Tan Jian Li and his team (comprising Dr Valerie Tay, Dr Li Hao, A/Prof Siow Jin Keat, A/Prof Brenda Ang, and A/Prof Yeo Seng Beng, and the Chapter of ID Physicians) in drafting this guideline.

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