



# 香港神經外科學會

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## The Hong Kong Neurosurgical Society

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### Experience sharing of COVID-19 and Neurosurgery in Hong Kong

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WHO declared COVID-19 as a global pandemic on 11 March 2020, exactly 7 weeks after the first confirmed COVID-19 case in Hong Kong. Among neurosurgical operations, endoscopic endonasal operations are considered to be of higher risk. It was reported that the first infected clusters of healthcare workers in Wuhan were associated with an endoscopic endonasal operation, in which 14 doctors and nurses have been infected with COVID-19. It is possible that the higher viral load at respiratory mucosa in affected patients, coupled with instrumentation and manoeuvre that generated aerosols during surgery, are the main reasons. However, that was during the early days of an epidemic when the infection control measures and awareness were apparently different from now.

Nowadays practices vary across the seven public neurosurgical units and private neurosurgeons in Hong Kong. We gathered the opinions and aim to provide some suggestions, in an evidence-based manner as much as possible.

**It is reminded that this commentary does not serve as a strict guideline, and is subject to adaptation and modification according to local practice and evolving knowledge every day. Specialist neurosurgeons should judge each patient on a case-by-case basis. Emergency neurosurgical operations and services should be maintained.**

It would be undesirable to see reduced survival or neurological damage due to deferral of operations in aggressive / malignant tumours, or tumours causing raised intracranial pressure or progressive neurological deficits in, for example, vision, cranial nerves function, etc.

Before operation, it is prudent to ask for FTOCC (fever, travel, occupation, contact, and clustering) histories, and upper respiratory and gastrointestinal tracts symptoms including anosmia. Assessment including checking of body temperature and performing chest X-Ray should be done to rule out any chest infiltrates. SARS-CoV-2 status should be checked by healthcare workers by nasopharyngeal swab (NPS) and throat swab whenever it is possible, and the patients should not be allowed to leave from the hospital afterwards before surgery. Patients should wear surgical masks during hospital stay and observe strict hygiene measures before operation. Blood tests should be performed to look for leukopenia, lymphopenia, raised CK, LDH and CRP.

If there is no violation of any of the points listed above, the patients can be regarded as being “standard risk”, in contrast to being “high risk”. It is known that every test has false negative rate and we can only try our best to protect patients and our staff. For high risk cases, consult infection control specialists of local hospital if operation is deemed necessary. Full personal protective equipment (PPE) and N95 are recommended during operation.

Inside the operating theatre, presence during endotracheal intubation, which is an aerosol generating procedure, should be avoided to minimize risks. Surgical instruments should be covered and protected as well. Be vigilant to prevent hospital-acquired infection by adhering to infection control practices.

#### **(A) Craniotomy or spinal operation**

In general, it is a safe procedure with low risk of virus transmission when performed under general anaesthesia. During operation, avoid pooling of blood during use of powered instruments and diathermy to minimize splash. A clean surgical field should be maintained, as always in neurosurgery.

#### **(B) Endoscopic endonasal surgery**

Despite it is considered by various professional bodies as a higher risk procedure, there are ways that can be followed to mitigate the risks. During operation, the number of staff in the operating theatre should be limited. Observers inside the theatre are not recommended. Some evidence points to that povidone-iodine can inactivate coronavirus family and its use during nasal preparation can be considered. Avoid using spray decongestants and use cottonoid pledgets instead. The use of powered instruments such as high speed drill, shaver / micro-debrider, and irrigation-suction during surgery should be kept to a minimum, while not compromising the outcome of surgery. Submucosal dissection approach and use of bone rongeur can be considered. Pooling of blood during the use of diathermy should be avoided. After operation, minimize diagnostic nasal endoscopy sessions just for inspection purpose. For selected cases, craniotomy can serve as an alternative option.

#### **(C) Emergency operations for COVID-19 patients**

The infection control specialists of local hospital should be informed and consulted for logistics arrangement. Operation should be performed in a negative pressure operation room. Careful pre-operative planning and briefing is needed to minimize the operation time, deploy minimal but adequate staff, as well as consume the least precious PPE resources. Cautious use of powered instruments and diathermy would decrease generation of aerosol within the operation theater. Always maintain a clean surgical field.

#### **(D) Neurosurgical patients in general**

It should be reiterated that all patients should strictly follow and comply with the instructions imposed by the hospital and the neurosurgical department.

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