



TRANSMISSION OF COVID-19 DURING NEUROSURGICAL PROCEDURES

There has been concern about transmission of Covid-19 during Neurosurgical operations, particularly those involving drills or endoscopes.

Like most advice in the current crisis, the following is based on a synthesis of national and international guidelines, published evidence, expert opinion – and common sense; similarly, like most, it will be subject to change as we learn more about this devastating illness.

If local supplies permit, the SBNS agrees with the Public Health England recommendations for levels of personal protection equipment (PPE) for all procedures during this time. Preoperative Covid-19 testing should be routine, and if results are unavailable patients should be treated as positive.

Covid-19 appears principally to be spread, either directly or via fomites, through droplets from respiratory epithelium – especially the upper respiratory tract. Blood is not a major vehicle: if significant virus were present in blood, we would more easily be able to do a reliable blood test for the disease. Similarly, it does not seem to concentrate in CSF.

Thus most neurosurgical procedures to the spine and head should be safe with routine face and eye protection. This includes cranial and spinal drilling, though we should all be more rigorous than usual with irrigation of drills to prevent aerosol formation. Care would clearly be needed with anterior skull base procedures which might breach an air sinus.

Endonasal procedures were said in early papers and anecdotes from ENT units in China and Italy to carry a very significant risk to theatre staff. Certainly the use of debriders and drills within the nasal cavity will produce a droplet aerosol which may be highly dangerous. Initial UK guidance was therefore cautious. As data have accumulated from cases dealt with using strict protocols, however, it is becoming clear that the risks are less than initially thought, and early audit data suggest that endoscopic endonasal surgery is safe on patients who have tested negative for Covid when level 2 or 3 PPE is used by ALL theatre staff. Alternatives are:

1. Microscope based trans-sphenoidal surgery, with a submucosal approach and entry to the sella using non-drill techniques. Level 2 or 3 PPE should be employed BY ALL THEATRE STAFF and care taken with nasal secretions.
2. Craniotomy, if the frontal sinuses are avoided, may be appropriate especially in larger tumours, craniopharyngiomas and meningiomas

We would still recommend that conservative measures should be adopted for the meantime in stable patients in whom surgery can safely be deferred.

Patients presenting with acute visual failure or IIIrd nerve palsy will usually have a period of conservative treatment during which swabs may be taken. If surgery is necessary before results are available, patients should, as above, be treated as positive. The small number of patients presenting acutely with severe endocrine symptoms (eg Cushing's) should be managed medically if possible.

Summary: From the information currently available, routine cranial and spinal cases are safe to perform. Endoscopic endonasal surgery should be undertaken if it is agreed locally that there is no reasonable alternative and maximum precautions are taken. This guidance is liable to change as more information becomes available and as safe protocols are developed and shared..