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 may be subject to change as we learn more about this devastating illness.

If local circumstances permit, the SBNS and Public Health England strongly advocate personal protection equipment (PPE) for all procedures during this time. However 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 at this point a recognised 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 if PPE is unavailable. 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, by contrast, are a very significant risk. Use of debriders and drills within the nasal cavity will produce a droplet aerosol which is highly dangerous. In Wuhan, ENT surgeons are amongst the worst affected – and N95 masks did not prevent infection.

The majority of pituitary patients present subacutely, and can hopefully wait, but it would be unforgivable to allow a patient to go blind during this period. With patients for whom surgery cannot be deferred, consideration should be given to alternatives to endoscopic surgery:

1. Craniotomy, if the frontal sinuses are avoided
2. Microscope based trans-sphenoidal surgery, with a submucosal approach and entry to the sella using non-drill techniques. Available PPE should be employed BY ALL THEATRE STAFF and care taken with nasal secretions.

If these are unavailable in a particular unit, or there is insufficient experience, networking should be employed. If it is felt that endoscopic surgery is necessary, theatre staff should be protected by PPE and numbers kept to a minimum. Preoperative Covid-19 testing should be employed when available.

The small number of patients presenting in an endocrine crisis should be managed medically if at all possible. If there is no alternative to trans-sphenoidal surgery, it is the strong feeling of the SBNS that this should be discussed at a national level.

Summary: From the information currently available, routine cranial and spinal cases are safe to perform. Endoscopic endonasal surgery should be undertaken only 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.