

Legislative Council Panel on Health Services

**The Neurosurgical Incident at Prince of Wales Hospital
involving the Creutzfeldt-Jacob Disease**

PURPOSE

This paper briefs Members on the neurosurgical incident involving Creutzfeldt-Jacob Disease (CJD) that occurred at the Prince of Wales Hospital (PWH) between October and November 2003.

BACKGROUND

2. CJD is a disorder involving rapid decrease of mental function and movement. These are abnormalities believed to be caused by damage done to the brain by a protein known as prion. This protein folds abnormally, and seems to encourage other proteins to become similarly misshapen, affecting their ability to function. About 85% of CJD cases are sporadic, though about 10-15% are inherited. The fatal human disease usually appears in midlife, with average age at onset of symptoms being in the late 50's to early 60's. It occurs worldwide at an estimated annual rate of one case per million population.

3. Prions cannot be destroyed by ordinary disinfection techniques used to prevent transmission of viruses and bacteria. A small number of CJD cases occurred as the result of various medical treatments or procedures, which inadvertently transferred the CJD agent. In medical literature, only 5 documented cases of CJD where contaminated surgical instruments were thought to have been the mode of transmission can be found. Since all of these cases occurred before 1976, it has been suggested that modern methods for cleaning surgical instruments have reduced the risk of transmission.

THE CJD INCIDENT AT PWH

4. The patient of the CJD incident at PWH was a 53-year-old male who had been well before the incident. The patient first attended a private

hospital on 8 October 2003. His clinical presentation at the time included difficulties with speech and walking and mental dullness. The result of Magnetic Resonance Imaging (MRI) scanning suggested encephalitis. He was admitted to PWH later that day, where he was given a course of an anti-viral drug on the basis of empirical evidence. The result of an electroencephalogram (EEG) performed on 14 October was compatible with a non-convulsive seizure. EEG features of CJD were not present at that stage. The clinical assessment by neurologists indicated that CJD was unlikely based on the patient's clinical features.

5. The patient's clinical condition deteriorated over the following couple of days. A follow-up MRI, which was conducted on 18 October, again suggested encephalitis. However, in view of the progressive deterioration of the patient's neurological function, a brain biopsy – a surgical procedure for the removal of a small piece of brain tissue for microscopic examination so as to help the physicians make a more accurate diagnosis – was performed on 23 October 2003. The pathologist reported to the neurosurgical team on the 31 October 2003 that the biopsy result was highly suggestive of CJD. The final histopathology report confirming the diagnosis arrived on 4 November 2003.

6. Upon receiving notification of the CJD diagnosis, the Infection Control Team and Theatre Sterile Supplies Department of the hospital took immediate action to retrieve all neurosurgical instruments which might have been used on the patient. These were decontaminated in accordance with the special protocols recommended in the HA Guidelines on Infection Control for CJD. As an additional precaution, instruments which could have been in contact with high-risk tissue of the patient were identified and removed from any further use.

7. PWH identified a total of 11 patients who might have undergone neurosurgical procedures with some of the instruments which might have been used on the CJD patient between 24 and 31 October 2003. Apart from a patient who had died of an underlying illness, all of the remaining 10 patients were informed by the head of the neurosurgical team of their potential exposure to instruments that might have been contaminated. The assessment was that the risk of these 10 patients acquiring CJD was extremely small and this assessment was communicated to the patients. The hospital provided all 10 patients with counseling and their potential exposure has been included in their medical record for future reference. The HA will

continue to follow up on these patients and provide assistance where necessary.

REVIEW OF GUIDELINES

8. The current HA Guidelines on Infection Control for CJD recommend the adoption of special protocols when a surgical procedure is performed on a patient suspected to have CJD. In the case at hand, the result of both the MRI and EEG were not suggestive of CJD. The diagnosis was therefore not suspected until the initial histopathology report was available. In order to prevent a recurrence of such an unfortunate incident, the HA has revised its guidelines on CJD, including the imposition of a quarantine on surgical instruments used in a brain biopsy until a definite diagnosis is established.

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