Autopsy Pathology Report

Patient Name: Seau Jr, Tiaina Baul
Case Number: SS-3590
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Diagnosis:

Multi-focal tauopathy consistent with a diagnosis of chronic traumatic encephalopathy (see comment).

Comment:

There are clusters of tau immunoreactive neurofibrillary tangles (NFTs) and neuropil threads in the neocortex, as well as occasional tangles in the subcortical gray matter and brainstem. The superficial location of the NFTs, the perivascular foci, and the tendency for cortical lesions to be at the depths of sulci are consistent with a diagnosis of chronic traumatic encephalopathy.
The slides were reviewed (without knowledge of the identity of the source of the tissue) by 3 outside neuropathologic experts who all concur with the diagnosis of two Federal neuropathologists.

Gross Description: Received from the San Diego County Medical Examiner's office is a previously sectioned brain labeled 12-00960. The brain is sectioned in the coronal plane with alternating sections fixed in formalin and also individually wrapped frozen pieces.The unfixed brain weighs 1580 grams. The dura mater is not received. The leptomeninges are thin and transparent without any evidence of hemorrhage or exudate. The brain is not edematous and no evidence of atrophy or softening is noted. The gray and subcortical white matter is unremarkable with gray white junctions being well demarcated. The basal ganglia, thalamus and hippocampus appear normal. Sections from the brainstem and cerebellum are unremarkable. The spinal cord appears grossly unremarkable.
Multiple sections from the formalin fixed slices were submitted for microscopic examination.

Cassette summary:

1. Left superior Frontal
2. Temporal pole
3. Nucleus Accumbens
4. Insula
5. Dorsolateral frontal
6. Superior temporal
7. Substantia Inominata
8. Amygdala
9. Thalamus and Mammillary body
10. Hippocampus
11. Superior Parietal
12. Inferior Parietal
13. Midbrain
14. Pons
15. Medulla
16. Cerebellum

Microscopic Description:

Multiple sections from the neocortex, brainstem and cerebellum were examined. Sections from the neocortex showed adult six layer cytoarchitectonics. A region in left frontal lobe with focal rarefaction (pallor) of white matter with a few foci of hemosiderin around blood vessels and a mild accompanying gliosis was identified. Appreciable neuronal loss was not seen. The subcortical white matter showed mild generalized pallor. Pigmented neurons in the substantia nigra and locus cerulei did not show depopulation but several globoid neurofibrillary tangles in intact neurons were identified. No classical Lewy bodies were identified. Sections from the cerebellum and medulla are unremarkable.

Immunostains for phosphorylated tau revealed multiple small foci of tau positive neurofibrillary tangles (NFTs) and scattered glial tangles in the neocortex involving mostly the sulcal depths (some clusters had an angiocentric pattern) in blocks taken from the frontal, superior temporal cortex. A superficial cortical layer predominance of NFTs was noted in some of the neocortical sections. Additionally, tau positive neuropil threads were also present in the same areas. Occasional NFTs were identified in the CA4 sector of the hippocampus, pyriform and insular cortex, nucleus accumbens, basal forebrain, hypothalamus, midbrain and pons. No neuritic (senile) plaques were observed in the neocortex by tau-immunostaining or on Bielschowsky's silver preparations. Immunostaining for alpha-synuclein protein did not reveal classical or cortical Lewy bodies. Beta-amyloid immunostaining did not reveal amyloid deposits.