Clinicopathological Evaluation of Chronic Traumatic Encephalopathy in Players of American Football

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In this study, post-mortem brain examinations were carried out in 202 deceased former American football players. Clinical assessments plus athletic history were also obtained from informants.

In this case series of 202 samples, CTE was neuropathologically confirmed in 177 former players using the NINDS–NIBB criteria. Diagnosis of more severe CTE pathology was observed to be more common in those with history of playing at college, semi-professional and professional levels; while milder CTE pathology was observed in former high school football players.

The authors conclude that their findings suggest CTE may be related to prior participation in American football and that a high level of play may be related to substantial disease burden.

As the largest CTE case series published to date, this paper marks an important milestone. However, the study is subject to a number of limitations. First and most importantly, the Boston University brain bank from which these samples are taken is liable to ascertainment bias as those with symptoms and signs of brain injury are more likely to agree to participation in the brain donation programme. In addition, the brain bank is not reflective of the overall American footballer population, with higher levels of play over-represented. Finally, the lack of comparison group prevents use of these results to estimate risk of participation in football.

In this prospective cohort study, young women aged 12–21 years were surveyed about their menstrual patterns for up to 120 days post sports-related injury. Of those completing the smartphone survey, 68 had received a concussion while 60 had an orthopaedic (non-head) injury.

Over the study period, two or more abnormal menstrual patterns were recorded in 16 (23.5%) of the concussion group and three (5%) of the orthopaedic group, a difference that was found to be statistically significant.

The authors hypothesise that their findings suggest concussion may adversely affect the neuroendocrine hypothalamic–pituitary–ovarian axis, and therefore menstrual cycles. The potential downstream consequences of such disruption, namely inadequate ovarian follicle stimulation and suboptimal estrogen production, are also highlighted. The authors conclude that clinicians treating female patients with concussion should enquire about menstrual patterns and consider treatment where needed.

This study was limited by the self-report questionnaire used and its subjective nature, which meant no data on the quality of the menstrual cycle could be collected. Further work should look to expand the study into non-injured participants and extend the follow-up time to

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