

signals of the cerebral cortex at the temporal horn of the left ventricle. The cortex overlying the heterotopia was abnormal, too. Pachygyria at the cortex of the right temporal parietal occipital area was identified.

Both heterotopia and pachygyria which presented at the brain MRI of our patient may reflect possible anatomic epileptogenic areas.¹ The above conditions represent developmental abnormalities of the CNS caused by neuronal migration defects. The embryogenetic period when the above developmental abnormalities took place is estimated to be between the sixth and the seventh gestational week when Fallot tetralogy was developed.

Comment

This is the first case report in the literature of comorbid CNS migration defect and Fallot tetralogy. The heart development defect allows us to not only estimate the possible embryogenetic period but also to raise suspicion for implication of the hypoxic blood supply of the defective heart in the etiology of the neuronal migration defect.

Defective neuronal migration results in the formation of a disorganized cerebral cortex in which neurons are not normally connected with one another.² Neurons that failed to reach their destination at the cortex remain at subcortical positions and differentiate composing islands of mature nerve cells, resembling cortical neurons (subcortical band heterotopia) separated from the overlying cortex by an intervening band of white matter. The gyral pattern is also abnormal and is the basis for the morphologic classification of neuronal migration defects into lissencephaly, pachygyria, and polymicrogyria.

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A Comment on “Exertion” After Sports-Related Concussion

SIR: The Concussion in Sport (CIS) group^{1,2} recommended that athletes with concussions undergo complete rest and be asymptomatic prior to beginning any rehabilitative therapy program. CIS recommended that concussed athletes avoid any exertional physical activity after a sports-related concussion, as such activity can reactivate and/or exacerbate the symptoms of concussion. A stepwise rehabilitation program is recommended, with successful completion of each graduated step being a prerequisite for transition to the next, more intensive activity level. The initial CIS statement in 2002 focused on physical exertion (e.g., walking, stationary cycling, weight training, running, skating), while the second CIS position paper, in 2005, added cognitive exertion as a potentially aggravating factor postconcussion. I report two clinical cases of concussed professional athletes whose recovery from a sports-related concussion was probably complicated by exertional activity typically not

considered “exertional”—sexual behavior.

Case Report

A 21-year-old hockey player sustained a concussion in a fight during a game. There was no loss of consciousness or amnesia; immediate symptoms included headache, dizziness, nausea, blurred vision, and a feeling of “fogginess” for several days. His score on the Post-Concussion Syndrome (PCS) scale was 23, with a preseason baseline PCS score of 2. He was removed from the game and did not return to play. His concussion history included one concussion 3 years prior with no loss of consciousness or amnesia and complete recovery after 2 weeks. The athlete was advised not to engage in any exertional activities (physical or cognitive). The concussive symptoms dissipated within a week, and the Athletic Trainer began him on a rehabilitative program of stationary cycling. Stationary cycling led to a recurrence of symptoms, so a return to complete rest and restriction from physical and cognitive exertion was recommended. One week later the athlete was again asymptomatic. He underwent neuropsychological testing, with results being consistent with his preseason baseline testing. MRI of the brain was reported as normal, and neurological examination was benign. He began light aerobic activity on a Wednesday, with no recurrence of symptoms. On Friday his activity level was increased from stationary cycling to skating, and he remained symptom free.

However, upon reporting to practice the following Monday, the athlete complained of a recurrence of symptoms (PCS score of 25). He denied any unusual or atypical exertional activity during the weekend to the athletic trainer. Careful questioning, however, revealed that his

girlfriend had visited that weekend and that they had engaged in sexual activity on several occasions. He was placed on complete rest once again and advised not to have any sexual activity. His concussive symptoms resolved by the following week. He successfully completed the graduated rehabilitative protocol without any recurrence of symptoms and was cleared for return to play. His recovery was subsequently complete and uneventful.

Case Report

A 25-year-old hockey player with a negative concussion history sustained a concussion in a game when he was elbowed in the back of the head by an opponent and then hit the boards with his head. There was no loss of consciousness or amnesia. Immediate symptoms included headache, "seeing stars," photophobia, phonophobia, and ataxia. He was evaluated by a physician and was cleared to return to play in the same game. Upon returning to the ice, his symptoms recurred quickly and he was unable to complete the shift; he was then removed from the game. Two days later, his score on the PCS was 12 (his preseason PCS baseline score was 1). Symptoms included headache, fatigue, photophobia, phonophobia, feeling slowed down, and sleeping more than usual. He was instructed to avoid physical and cognitive exertional activities for a week. Brain MRI was normal and neurological examination was negative. He was evaluated again a week later, with a PCS score of 1 (sleeping more than usual). He reported however, that four days after the injury he and his wife had initiated a sexual interaction but that during the activity he "saw stars" and was unable to continue the sexual encounter. His performance on neuropsychological testing 12 days after the concussion

was consistent with his preseason baseline testing, and the athletic trainer began him on a graduated rehabilitation program. He tolerated stationary cycling without difficulty but experienced a recurrence of symptoms when he began skating. He was again withheld from all exertional activity for a week and was then once again asymptomatic (PCS score of 0). He abstained from sexual activity, completed the graduated rehabilitative program, and returned to play without any recurrence of symptoms.

Comment

Sexual behavior can be an (overlooked) exertional activity, and may need to be considered by sports medicine professionals in their operational definition of exertional physical activity. Athletes may need to be cautioned about the potentially deleterious effects of sexual activity during the rehabilitative phase of a sports-related concussion.

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Possible Delayed Speech Acquisition With Clozapine Therapy During Pregnancy and Lactation

SIR: Most of the study by Ernst and Goldberg¹ reported perinatal

outcome with clozapine therapy with no focus on neurodevelopment. Here, I report a case of a woman with schizophrenia who continued clozapine treatment throughout her 9 months of pregnancy and during lactation.² This report also highlights neurodevelopmental aspects, particularly speech of the baby.

Case Report

"Mrs. B," a 30-year-old woman, had been suffering with schizophrenia for the past 10 years. Her illness was continuous with partial remission and exacerbation and did not much improve on various typical antipsychotic drugs. Therefore, a regimen of clozapine, 25 mg per day, was started and was increased to 100 mg per day over a period of 2 weeks.

After remaining stabilized on clozapine for 6 months, she became pregnant. It was not a planned pregnancy, but the couple decided to continue despite the possible risks to the fetus with antipsychotic drugs. Her routine laboratory investigations, including blood glucose, hemoglobin, and white blood cell count were within normal limits.

Mrs. B attended an antenatal clinic every 4 to 6 weeks beginning in the third month of pregnancy until her delivery. She gained weight normally throughout pregnancy, was concerned, but had positive attitude toward pregnancy. Her nutritional care was good. She continued on the same dose of clozapine and did not exhibit an exacerbation or a behavior that could harm her fetus throughout her pregnancy.

At 9 months and 2 days of gestation, she delivered a baby girl weighing 2.95 kg without any perinatal complication. Until the baby was 1 year old, she was breast-fed