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Case Report

Reemergence of Remote Concussion Symptoms in Amateur Athletes after Minor Head Bumps-A Report of 2 Cases

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Abstract

The 2012 Zurich Consensus Statement defined concussion as a complex pathophysiological process affecting the brain induced by biomechanical forces. Concussive and post-concussion symptoms are currently thought to reflect a functional rather than structural disturbance typically resolving spontaneously with no imaging abnormality. The majority of patients with concussion recover within a 7-10 days period, in some symptoms persist beyond the 1 month generally accepted time frame for recovery. Some patients recover within the above generally accepted time frame but show reemergence of concussion symptoms after minor head bumps. Two such cases in amateur athletes are reported here..

Case Report

A 34-year-old right handed lacrosse player suffered a mild grade of concussion about 1 year ago when while playing, he was struck on the head by an opponent's stick. No immediate loss of consciousness was reported. He experienced headache and light headedness for 1 day with spontaneous resolution. After a month, there was sudden reappearance of headache. His physician ordered MRI brain and MRA brain, both of which were reported normal. Headaches again self-resolved. Since then he reports headache only when he bumps his head into something, usually a trivial bump or when he exercises. A 64-year-old right handed amateur skier reported slipping and falling on ice about 8 years ago. Landed on his head and said he was "out" for about 15-30 seconds. When he came to, he felt nauseated. Next day consulted a neurologist. CT scan head was normal. Went back to work after 1 week. Since then every time he bumps his head, symptoms of nausea, feeling like he is in a funk, light and sound sensitivity return. Sometimes these last for about 1 week with spontaneous resolution. Consulted a neurologist, migraine was suspected and he was prescribed anti-migraine medication which didn't work.

Discussion

The 2012 Zurich Consensus Statement defines concussion as a complex pathophysiological process affecting the brain triggered by biomechanical forces [1]. Typically most people recover from a concussion within 2 weeks of the injury. In about 10 to 20 percent of cases symptoms of concussion may persist longer. Post-concussion syndrome (PCS) refers to the persistence of concussion symptoms beyond the acute post-injury period and includes a constellation of disparate symptoms such as headache, nausea, dizziness, attention and concentration problems, impairment of short term memory, a sensation of fatigue (both physical and mental), light and sound sensitivity, irritability, insomnia and emotional lability [2,3]. Studies have identified older age, high initial concussion symptom load, duration of loss of consciousness and post-traumatic amnesia, pre-existing anxiety and depression as predictors of persistent PCS [4,5]. The reemergence of remote concussion symptoms after minor head bumps has not been reported in the medical literature. These are patients who report typical concussion symptoms following head trauma which typically resolve within the normal time frame of acute post-injury period. However these asymptomatic patients periodically report the reemergence of their remote concussion symptoms with the inciting trigger typically reported to be a minor bump to the head or some other cognitive or physical stressor such as going to a rock concert or an increase of stress at work or home.

The underlying etiopathogenesis of this phenomena remains largely enigmatic and speculative. Whether this is a variant of persistent PCS is unclear [4,5]. While in persistent PCS there is usually no return to baseline after the inciting concussion event, the patients reported have reemergence of their remote concussion symptoms only following a minor head trauma typically low velocity and low intensity bumps to the head with return to pre-morbid baseline and functioning in-between. Underlying migraine predisposition has also been postulated as one possible etiology [6,7]. While this is a viable hypothesis, the patients reported above had no pre-morbid migraine symptomatology (no headaches prior to the concussion). They also lacked the typical prodrome, ictal and postictal symptomatology of either classical or common migraine attacks. The third explanation for the reported phenomena is that it is a manifestation of a conversion disorder (neurologic symptoms or deficits that develop unconsciously and non-volitionally and usually involve motor or sensory function). The reemergence of the remote concussion symptoms is incompatible with known pathophysiologic mechanisms or anatomic pathways. The onset, exacerbation, maintenance or reemergence of these symptoms is likely directly attributable to mental factors, such as stress and anxiety. The treatment involves reassurance after judicious diagnostic testing to rule out any organic etiology.



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