Research and Reviews: Journal of Clinical and Medical Case Studies

Concussion Management

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Editorial

Received date: 10/11/2016
Accepted date: 11/11/2016
Published date: 17/11/2016

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Keywords: Concussion, Injury, Sports medicine

Concussion awareness has been a growing and heated topic of discussion in recent years to evolving literature and media attention. In light of all the recent attention, there still seems to be a significant disconnect between the evidence-based literature and the education provided to athletes, coaches and parent and no community has been effected more by this separation than that of the athletic population. Concussion recognition and management is very important and complex process within the sports medicine field, not just on the collegiate and professional level, but now at the high school and adolescent level. Every year approximately 44 million adolescents partake in sports across the US. One of those athletes, between 1.1 and 1.9 million will experience a reported sports and recreational related concussions (SRRCs), making it one of the most common injuries diagnosed [1]. A recent study has shown each year the incidences of SRRCs to increase 15.5% (98-07) on average making it not only a common injury, but a growing epidemic/concern [2]. Recent efforts have been made to try and find ways to prevent these numbers from rising. These efforts include creating better equipment, changing game play rules, and promoting safer playing techniques within each sport [3]. Along with a preventative tactic, a movement is being made to improve the athletic communities' general knowledge of the topic. By increasing the general knowledge about SRRCs, health care providers hope to improve the chances of SRRCs being properly diagnosed as well as improve the treatment plans that follow them.

A concussion is classified as a mild traumatic brain injury (mTBI). Although the primary etiology of the majority of acute concussion symptoms can be attributed to functional neuronal disturbance as well as neurometabolic changes, the same forces capable of causing an mTBI may also concurrently injure the soft tissue structures and joints of the cervicothoracic spine [4]. Injury or dysfunction of the cervical spine has been shown to cause headache, dizziness, loss of balance, nausea, visual and auditory disturbance, reduced cognitive function, and many other signs and symptoms considered synonymous with concussion [5]. In comparison, indicators of a concussion may include: (1) Symptoms—somatic (e.g. headache), cognitive (e.g. feeling like in a fog) and/or emotional symptoms (e.g. lability); (2) Physical signs (e.g. loss of consciousness (LOC, amnesia); (3) Behavioral changes (e.g. irritability); (4) Cognitive impairment (e.g. slowed reaction times); (5) Sleep disturbance (e.g. insomnia) [6]. Many of the symptoms present in concussion may also be present in a patient with injury or dysfunction of the cervical spine. Increased awareness regarding the involvement of cervical spine dysfunction in concussion management and prevention is becoming increasingly important and evident. The injury mechanism of concussive injuries is very similar to whip-lash injuries, resulting in cervical spine dysfunction [5]. Persistent headaches and neck pain is a common symptom following a minor head injury, mTBI, or a concussion, possibly related to simultaneous injury of the structures of the cervical spine [7]. In comparing a group of patients with post-concussional headaches (PCH) to a control group, Treleav et al. found that the PCH group was distinguished from the control group by the presence of painful upper cervical segmental joint dysfunction, less endurance in the neck flexor muscles and a higher incidence of moderately tight neck musculature [7]. Upper cervical joint dysfunction is a feature of cervicogenic causes of headaches suggesting the inclusion of a precise physical examination of the cervical region in diagnosing patients suffering from concussion symptoms [7]. Mobilization, manipulation and clinical massage are all effective interventions for the management of cervicalgia [8]. These findings further substantiate the need for manual therapies such as SMT and soft tissue treatment to be utilized in concussion treatment in order to address any cervical spine injury and/or dysfunction present.

The length of recovery and RTP varies from individual-to-individual. The majority (80–90%) of concussions resolve in a short (7–10 days) period, although the recovery time frame may be longer in children and adolescents [6]. However, recent research has identified that balance dysfunction and cognitive deficits persist well beyond the physical symptoms of the recovery process. The duration of time for the resolution of those symptoms can vary from individual-to-individual, ranging anywhere from one week to several months, leading to the increased importance of proper cognitive and cerebellar post-concussion testing [6].

This further brings to light the importance of proper diagnosis and treatment, especially in those patients who are suffering from post-concussion syndrome (PCS). As more evidence continues to emerge correlating symptoms related to concussion and post-concussion syndrome compared to that of whiplash/cervical spine sprain/strain injuries, the healthcare profession needs more variety of medical professionals stepping in to play a role in the proper management of symptoms. In fact, it is the editor's opinion that SRRCs should be managed by a team of medical providers now vs. a single individual practitioner. The list of these medical providers includes, but not limited to: medical doctors, pain management specialists, neurologists, chiropractors, physical therapists, occupational therapists, vision therapy specialists and vestibular therapists. These clinicians must work together to educate, diagnose, treat and manage, and then report on their various work in the concussion field.

REFERENCES

1. Brayn MA, et al. Sport-and recreation-related concussion in youth. Pediatrics. 2016;138:1.
2. Simon LM and Mitchell CN. Youth concussion laws across the nation: Implications for the traveling team physician. Curr Sports Med Rep. 2016;15:161-167.
3. Schneider DK, et al. Current state of concussion prevention strategies a systematic review and meta-analysis of prospective, controlled studies. Br J Sports Med. 2016.
4. Faul M, et al. Traumatic brain injury in the United States: Emergency department visits, hospitalizations and deaths 2002–2006. Atlanta (GA): Centers for disease control and prevention, national center for injury prevention and control. 2010.
5. Marshall CM, et al. The role of the cervical spine in post-concussion syndrome. The Physician and Sportsmedicine. 2015;43:274-284.
6. McCrory P, et al. Consensus statement on concussion in sport: The 4th international conference on concussion in sport held in Zurich, November 2012. Br J Sports Med. 2013;47:250–258.
7. Treleaven J, et al. Cervical musculoskeletal dysfunction in post-concussion headache. Cephalgia. 1994;14:273-279.
8. Wong JJ, et al. Are manual therapies, passive physical modalities or acupuncture effective for the management of patients with whiplash-associated disorders or neck pain and associated disorders? An update of the bone and joint decade task force on neck pain and its associated disorders by the optima collaboration. Spine J. 2015;15:01234-01236.