Introduction: Migraine and chronic headaches (CH) are common in children and adolescents. As with adults, the characteristics of CH in children are not well defined and are characterized in four diagnostic categories of transformed migraine, chronic tension-type headache, new daily persistent headache and hemicrani continua. The prevalence of common chronic headache in children ranges from 0.2-0.9%. Studies both in adults and children have found greater disability and poorer coping among the CH patients. The location of CH is usually bifrontal, migrainous in nature and the severity depends upon the copyng characteristic of the individual patient. The severity of the CH usually determines the functional disability; missed school days, disrupted peer and social activities, and stressful family interactions.

Case Report: A 16-year old female adolescent athlete presented with a three-year history of persistent bilateral head and neck pain involving primarily temporal and parietal regions. The headache started after a waterskiing accident without direct trauma to head and neck. She experienced neck pain immediately after the accident followed by hemicranium headache; intermittent aching/burning pain, aggravated by neck movement and associated with some nausea. Numerous consultations with neurologist, neurosurgeon, ophthalmologist, otolaryngologist, oral surgeon and orthopedist revealed no abnormal physical findings. Comprehensive laboratory and neuroimaging tests (CT, MRI with contrast, X-rays) of the neck and head, EEG, LP, EMG-NCT of the neck, and body bone-scan were also unremarkable. Over time, the CH intensified, spread to the contralateral side and was non-responsive to migraine and CH pharmacological, behavioral and physical therapies. It strikingly impacted school attendance, sports activity, social and family interaction, and disrupted night sleep. As a result of therapy failures, she became discouraged, anxious, depressed and attempted suicide. She was transferred to psychosomatic unit at Children’s Hospital and the Pain Treatment Service was consulted. Physical examination showed unilateral paresthesia of the scalp; light pressure of the suboccipital region identified a trigger point just medial to the occipital artery pulsation that reproduced unilateral shock-like pain. Occipital neuralgia was suspected and a trail of lidocaine 1% 5ml infiltration in the proximity of the trigger point produced significant diminution of the headache and transient resolution of the scalp paresthesia (figure). A repeat injection with bupivacaine 0.25% 5ml produced longer relief of pain and paresthesia. Subsequent, injections with bupivacaine 0.75% 5ml and dexamethasone 2mg at 3-week intervals produced complete resolution of the CH and improvement of mood; twelve weeks later she returned to school and resumed normal activities.

Summary: A rare cause of CH is occipital neuralgia, which involves greater (C2) and/or lesser (C3) occipital nerves and results from direct trauma, whiplash injury, entrapment, or cervical spine pathology. It affects females more frequently than males and misdiagnosis or inadequate treatment of this condition can lead to CH. The diagnosis of this condition requires a high index of suspicion and meticulous history taking and physical examination.

In this patient, the possible history of whiplash and correct diagnosis of occipital neuralgia were missed. Subsequently, the clinical presentation was complicated by migraine-like symptoms and the associated psychological stress that arouses during the course of the patient’s pain intensification lead to rehabilitative approach of the headache management.

Occipital neuralgia occurs as a result of an injury to the greater occipital nerve, which may be vulnerable to compression as it passes through the semispinalis capitis or superior trapezius muscle; however appropriate work-up should be considered in order to rule out structural causes of C2 radiculopathy such as cervical disc herniation, spurs, tumors and vascular compression. The greater occipital nerve block is a simple diagnostic test to confirm the source of the pain and often therapeutic when repeated alone or with steroid. Injection of chronically contracted semispinalis capitis or superior trapezius muscle with botulinum toxin is effective in relieving muscular compression of C2. (3) Various therapies are proposed for C2 radiculopathy; C2-C3 root
decompression, ganglionectomy or electrical stimulation via implantable electrodes. (4,5) The limited data suggest that some patients may obtain a short-term benefit from the use of local injections and in refractory cases surgery may be required to relieve the pain, however, the long-term efficacy remains unknown.

References: