Background: A 23 year old male ice hockey player came into the athletic training room stating he was struck on the left side of the head by an opposing players elbow during a game in October, 2009. He declared his hearing was “foggy,” he was dizzy, lightheaded and felt “slow”. The athlete had a history of two incidences of mild traumatic brain injury (MTBI) in December 2008 and February 2009. He was able to communicate, aware of his surroundings, and was able to recall the event with full memory. Pupils were equal and reactive to light. Cranial nerve tests were within normal limits, while he displayed positive rhombergs, with noticeable postural sway. Athlete showed nystagmus during lateral eye movement. Cognitive tests were performed with little delay, and there were no signs of trouble with delayed recall. He was evaluated by the team physician the following day and diagnosed with a grade 1 MTBI and restricted athlete from activity. The athlete continued post-concussion testing and was treated with pulsed ultrasound and anterior-posterior glides for a rotated C2 vertebrate. S/P four weeks, athlete presented asymptomatic, and team physician allowed for gradual return to physical activity. During the next 2 weeks, he complained of mild headaches and dizziness following longer workouts. S/P six weeks, was referred to a neurologist, was diagnosed with post concussive syndrome, and instructed to refrain from physical activity.

Differential Diagnosis: MTBI, cerebral contusion, vestibular dysfunction. Treatment: MRI reported an ill-defined area of mildly increased flair and T2 signal present in the lateral right frontoparietal area. S/P seven weeks, athlete was referred to a chiropractor to evaluate the rotated C2-C3 region for possibility of a cervical spine pathology leading to concussion-like symptoms including dizziness and vertigo. S/P ten weeks, athlete was seen by a neurologist specializing in long term concussive symptoms. Following this visit, the physician reviewed MRI and Impact Scores, and referred athlete to a vestibular specialist. With the use of frenzel goggles, athlete showed no spontaneous nystagmus sitting still; however, with head rotated left, he showed right beating nystagmus with headshaking and hyperventilation leading to the diagnosis of left Benign Paroxysmal Positional Vertigo (BPPV). He was referred to Physical Therapy to perform the Eply maneuver and left Canalith Repositioning night treatments. Within a week, athlete presented asymptomatic with the Epley Maneuver, but remained slightly symptomatic with vertical movements. He was given vestibular home exercises to continue for the next 3-4 weeks, and could start low level, symptom free physical activity with gradual progression to functional activity. S/P twenty-two weeks, he was cleared to return to non-contact skating; at forty-eight weeks, he was cleared to return to play for the upcoming season. Uniqueness: BPPV is often the cause of 20% of all dizziness, and probability of having this type of vertigo increases with age. Of the 6 million cases of vertigo diagnosed every year, 17-42% of patients are eventually diagnosed with BPPV. The most common cause of BPPV in people under 50 is head injury, including MTBI. In this case, this was the athlete’s third consecutive MTBI. The maneuvers to treat BPPV are roughly 80% effective; however only 8% of sufferers receive this effective treatment. Conclusions: Often, athletes experience MTBI’s in high contact sports. Some athletes experience symptoms longer than others, and it is important to monitor these athletes on a daily basis. If symptoms persist and athlete is no longer responsive to treatments or progressions, the athlete should be referred to a doctor specializing in dizziness and hearing who can diagnose BPPV, provide the necessary effective treatments, and return the athlete back to play. Word Count: 599