Case Report for a mTBI Patient Treated with Intermittent Home HBOT, Intranasal and IV PRP Cocktail, Intranasal Pluripotent Stem Cells from Peripheral Blood, Intranasal Insulin, Cranial Osteopathy, and a Ketogenic Diet

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Abstract:

Traumatic brain injury (TBI) is one of the most prevalent injuries in the U.S. leading to death and long-term disability. CDC estimates are that 1.7 million individuals suffer annually with severe to moderate TBI due to blunt trauma or motor vehicle accidents as the biggest causes.

Further TBI statistics in the US include the following:

- 5.3 million Americans are living with disabilities from brain trauma
- 50,000 patients die each year from these disabilities
- 32% of these patients never receive any medical care
- Approximately 40% of Coloradoans (1.5 million) have some degree of a TBI
- (based on random telephone survey of 2700 Adults over 18 years old, 42% report a
- traumatic brain injury (36% mild, 3.6% moderate, 2.4% severe.)

Much of the attention of medical community has focused on the more severe cases of TBI, yet 85% of the patients with a traumatic brain injury are actually mTBI cases (mild TBI). These patients regularly get overlooked medically and may be expected to return to their workplace, school, active duty, or sports after a short period of rest (often less than 1 month).

Modern medicine proves very efficacious in the golden hour after the injury to save many severe TBI patients from death. However, with both severe and mild TBI patients, post-concussive symptoms including memory loss, inability to concentrate, loss of motor function, decision-making, emotional affect, pain, and other brain damage symptoms often confine even mTBI patients to a prison within their own brains.

Even when mTBI patients do get diagnosed and provided some form of therapy, the treatment provided by physicians is largely targeted at treating the symptoms of the TBI with pharmaceutical drugs, occupational and physical rehabilitation, speech therapy, and cognitive

maintenance. After 1-2 years, many mTBI patients plateau in their improvements and choose to accept their chronically debilitated condition as permanent.

Treatment for mTBI by the multimodal application of hyperbaric oxygen therapy, PRP, pluripotent stem cells, intranasal insulin, and cranial osteopathy provides an effective solution to the post concussive problems faced by many TBI patients, particularly the mTBI patients. While this multimodal therapy may take 3-4 months for its full effects, many of these treatments can be applied over a 3-day period in a clinical setting and followed up by in home use of HBOT chambers by the patient. This type of rapid, regenerative therapy for TBI patients is revolutionary, not only because it is a unique multimodal application of treatments, but because it may be more effective at restoring the brain to health than even significantly more expensive multi-week treatment protocols.

Introduction

The following is a case report regarding an mTBI patient, Ms. Pan, who suffered post concussive symptoms after hitting her head in December 2016. This patient, after receiving a protocol of hyperbaric oxygen therapy, PRP, pluripotent stem cells, intranasal insulin, and cranial osteopathy and following a ketogenic diet was treated at the clinic on February 9-10, 2017. After 4 months, Ms. Pan returned to the clinic for additional intranasal PRP and pluripotent stem cells, reporting the significant improvements in her post concussive symptoms.

Of note: Ms. Pan did not have a consistent schedule of her use of the home HBOT chamber. Because the chamber was located at a friend's, she only used it intermittently (2 days per week), rather than daily (as recommended) if she had possessed her own home chamber. It is estimated that Ms. Pan performed about 30-40 home hyperbaric oxygen dives over a 5-month period before and after being treated by Dr. Hughes on 2/9/17 until 6/2/17. She performed at least one medical grade HBOT dive to 1.75 ATA on 2/10/17.

Physical Findings and Assessment

History and Exam on 2/9/2017

Ms. Pan is a 28-year-old female who reports hitting head on toilet while traveling in a foreign country. Patient reports hitting her head when in the restroom; she remembers standing up and feeling a little dizzy before hitting her head on the toilet and losing consciousness briefly. She reports pain on the top right side of her head. Ms. Pan performed several home hyperbaric dives in the past 2 weeks which seem to have helped her feel a little bit better but continues to suffer from post concussive symptoms including headache pain, memory loss, difficulty making decisions, difficulty communicating thoughts and ideas, and sleeping (and staying asleep), as well as handling the stressors of everyday life.

REVIEW OF SYSTEMS: General: No weight change, generally healthy, feels physically and mentally fatigued daily Head: Headache pain daily Eyes: reports blurred vision since accident--comes and goes Ears: No change in hearing, no tinnitus, no bleeding, no vertigo. Nose: No epistaxis, no coryza, no obstruction, no discharge. Mouth: No dental difficulties, no gingival bleeding, no use of dentures. Neck: reports stiff and achy neck Chest: No dyspnea, no wheezing, no hemoptysis, no cough. Heart: No chest pains, no palpitations, no syncope, no orthopnea. Abdomen: No change in appetite, no dysphagia, no abdominal pains, no bowel habit changes, no emesis, no melena. Musculoskeletal: Reports pain in R hip area Neurologic: post concussive symptoms Psychiatric: mood swings; trouble sleeping

PHYSICAL EXAM FINDINGS: General: Normotensive, in no acute distress. Head: TTP over R parietal area--central zone; decreased CRI, venous sinus congestion; R side bending torsion Eyes: PERRLA, EOM's full, conjunctivae clear, fundi grossly normal. Ears: EAC's clear, TM's normal. Nose: Mucosa normal, no obstruction. Throat: Clear, no exudates, no lesions. Neck: TTP at C2 bilat transverse processes Chest: Lungs clear, no rales, no rhonchi, no wheezes. Heart: RR, no murmurs, no rubs, no gallops. Abdomen: Soft, no tenderness, no masses, BS normal. Back: Normal curvature; TTP at bilat scapular spine at trapezius/levator attachments. Extremities: decreased ROM of R hip flexor; TTP at R rectus femoris at origin. Neuro: post concussive findings Psyche: increased affect; anxious

ASSESSMENT: Ms. Pan was assessed with the following conditions:

- TBI with post concussive syndrome including: headache pain, memory loss, difficulty making decisions, difficulty communicating thoughts and ideas, and sleeping (and staying asleep), mood swings, and ability to cope with stressors
- Whiplash
- Cervicalgia
- Upper back and neck strain
- R rectus femoris strain
- Somatic dysfunction of Head, neck, back, and lower extremity

Management and Outcome

Ms. Pan was provided with the following recommendations:

TBI Therapy protocol including intranasal plasma cocktail, IV nutrition, intranasal and IV stem cells, intranasal insulin

Continue MCT oil, ketogenic diet, and nutritional support

Cranial osteopathy

Musculoskeletal injections to neck and R LE

Continue home hyperbaric treatment (referral to medical grade hyperbaric chamber if available)

Home stretching and PT

Procedure performed on 2/9/2017

Patient was properly consented and understands risks of procedure. IV infusion of Myers nutrients was performed before procedure.

Using sterile technique, patient was infused intranasally with a sterile solution (composed of a 0.3% ropivacaine, trace MgCl2)

R nares (4cc)
L nares (4cc)

Then patient was infused with a sterile solution (composed of 1cc D50, 7cc autologous plasma, trace HCl, trace ascorbate, 40 units Humulin R, 3/4 cc glutathione, 1/4cc B12)

R nares (3cc)
L nares (3cc)

Patient was stable after intranasal infusions and advised to rest, use ice, and over the counter medications for pain.

Procedure Performed on 2/10/2017

Intranasal infusion, IV, and injection of PBD-PSC treatment (platelet derived stem cells)

Patient was properly consented and understands risks of procedure.

Using sterile technique, patient was infused intranasally with a sterile solution (composed of a 0.3% ropivacaine, trace MgCl2) with a nasal atomizer:

R nares (3cc)
L nares (3cc)

Then patient was infused with a sterile solution (composed of platelet derived autologous stem cells (harvested and prepared in a sterile fashion diluted 50% with NS) with a specialized catheter:

R nares (8cc)
L nares (8cc)

Patient was then injected with a sterile solution (composed of 0.3% ropi, D10, trace MgCl2, trace ascorbate) followed by a sterile solution (composed of platelet derived autologous stem cells (harvested and prepared in a sterile fashion diluted 50% with NS) into the following areas with a 25 g 2-inch needle:

L scapular spine 2 cm lateral to L angle (3cc ropi, 7cc PBD-PSC)
R scapular spine at R angle (3cc ropi, 6cc PBD-PSC)
C2 L IT ligament (3cc ropi, 5cc PBD-PSC)
C2 R IT ligament (3cc ropi, 5cc PBD-PSC)
R rectus femoris at AIIS (4cc ropi, 10cc PBD-PSC)

8cc of PBD-PSC solution was infused intravenously into patient's antecubital vein on the L arm.

Patient was stable after injections and advised to rest, use ice, and over the counter medications for pain.

On 6/2/2017, Ms. Pan was seen again at the clinic and reported the following improvements:

Memory 30%
Focus/concentration 40% improvement
Sleep 50% improvement
Light and sound sensitivity 75% improvement
Ability to handle stress 40% improvement
Moods 50% improvement

She reports, “I went from not being able to leave the house or work to being able to go outside, on walks and work part time from home.”

She also reports a 50-60% reduction in neck pain and 95-100% resolution of her R hip pain.

Conclusions

Ms. Pan’s mTBI case, like many other mTBI cases, is one that would have very likely been “glossed over” by the mainstream medical community. Her MRI and CT-scans, had they been performed, would have produced no findings, and Ms. Pan would have been told she was able to

return to work and perform her tasks at full duty. Further neuropsychological testing would best demonstrate the qualitative effects of her mTBI on her everyday life. Nuclear spec scanning and Q-EEG studies would best able to quantify the degree of blood flow to specific areas her brain as well as its activity. The most impressive aspect of this patient's treatment protocol is that she may eventually gain almost a full recovery due to power of a minimally invasive, cost effective multimodal regenerative treatment protocol. While it may take a year or more to achieve a return to optimal brain health, Ms. Pan has a progressive trajectory of improved brain functioning that is not commonly seen among traditionally treated mTBI patients.