Concussions in Volleyball

PRACTICE AND TRAINING PRECAUTIONS TO REDUCE THE RISK TO YOUR PLAYERS

SPEAKER: CORINNE ATCHISON
Today’s Objectives

• Awareness of concussions in volleyball
• Baseline testing for all athletes
• Best practices for warm-up and practice procedures
For the love of the girls, 
For the love of the game

• Who Am I?
  – Club and High School Coach in the North Texas Region (NTR) for 17 years.
  – Last 5 years in the 13’s Division for the GJNC:
    • 2012 Bronze Medalist in American
    • 2013 National Champion in USA
    • 2014 Bronze Medalist in Open
    • 2015 National Champion in Open
    • 2016 National Champion in Open
  – Recently awarded AVCA Coach of the Year in the 13’s Division
  – High School and Collegiate Athlete
  – Recently wrote an article for Volleyball.mag about concussions.
    http://volleyballmag.com/corinneatchison/
Once upon a time...

• As a high school player, if you got hit, your “bell just got rung” and you would return to play as soon as the ringing stopped.
  – Concussion awareness and protocol was non-existent.
  – It wasn’t until the NFL was exposed by a doctor and former players that concussion talks became more serious.

• My 1st diagnosed concussion was in 2012, two days before Nationals in Ohio.
  – Walking across 10ft line when a SHORT serve hit me in the right temple.
  – All I remember is a flood of tingling, numbness, ringing in the ears, and just “not feeling right.”
  – Eyes were fully dilated, slurring words, not making sense while talking.
  – Trainer on site conducted several tests, including giving me 3 words to remember and asked me again after 30 min. No clue she had even talked to me.
  – Taken to hospital, CT scan was clear (just as most all concussion patients, CT scans will come back clear.)

• Given medication for the nausea and vertigo, returned to coaching at Nationals, felt absolutely miserable the entire time I was there.
Once upon a time...

- Six weeks later, was coaching at a HS camp and got hit by an errant ball while they were peppering.
  - Immediately eyes dilated and tingling sensation all over
  - Other coaching staff immediately knew something was going on just by looking at me.
- Doctors suspect now that it was Second Impact Syndrome since I was not recovered from the previous hit.
- Eventually all symptoms subsided and went on to living a normal life.
- A year later, was hit by servers during warm-ups at a tournament.
  - Symptoms were loud ringing of the ears, wave of nausea, and eyes went glossy.
  - Symptoms lasted about a week, returned to normal activity. Only saw a trainer, no doctors involved.
The hit that changed my life...

• In August 2014, coaching my HS team at a tournament
  – Was in LF on opposite side of net, throwing into my passers for my MH and RS to warm-up attacking.
  – OH went up and cut a ball that struck me again in the right temple. I never saw it coming.
  – Did not lose conscious, but everything did go black and I remember being hunched over and not being able to move or process what was going on.

• The immediate symptoms:
  – Extremely sick to my stomach, ears were ringing loudly, everything was leaning right, noise and lights were crashing in all around me, I literally couldn't see straight, and my head felt like it was about to explode.
  – Walked over to bench with head in hands, told my Asst. I knew I had another concussion and he would have to coach that match for me. (Recently found the video tape of that match and it's like watching your death in slow motion).
The hit that changed my life...

• After the match concluded:
  – Refs came to ask if I was okay since was completely out of normal self during the match.
  – Went and laid down on school cafeteria floor arguing with a parent about why I didn’t need to have an ambulance come or go to hospital.
  – Agreed to go see trainer, after quick testing, sent me to a 24hr Emergency care place.

• At the Emergency care facility:
  – Used my maiden name for the 1st time, couldn’t remember my address or birth year.
  – CT scan came back cleared, as usual.
  – They agreed with my self-diagnosis of a concussion and gave me meds for the vertigo, headaches, and nausea.
  – Told me to see my trainer at school and she referred me to a concussion specialist in Dallas.
Impact Testing and Baseline procedures...

“HEADS UP” by CDC is an app that is a great tool for any coach or parent to have on their phone in case they are not sure if their athlete suffered a concussion.

*IMPORTANT to note...some symptoms may not seem apparent until hours or days later!

- Impact and Baseline Testing (standard protocol in many high school programs now):
  - No baseline test available for me, had to use an average.
  - Failed every test with a 5% or below. Just the test alone made me sick with all my symptoms completely flared up.
  - After one week off from work, my Impact scores were still in the 5-10% range, so forced off another week.
  - Went back to work, but after another week of in the gym and going to doctor and still failing all tests, was forced off work another 3 weeks.

- 6 weeks after the hit:
  - Don’t remember much during those 6 weeks-it’s as if my memories were all erased.
  - Went back to coach the last 2 weeks of playoffs, only matches-couldn’t do the practices.
  - Miserable every second, especially gym noise and lights.
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My grim story continued...

• By March of 2015, I was in the lowest of low places—all while trying to work full time and coach my team.
  – Had lost 25lbs due to numerous medications I was on and was always nauseous.
  – Was fainting nearly every night at home.
  – Completely sleep deprived as trouble sleeping is a symptom.
  – Seeing 2 neurologists for headaches (2 rounds of Botox, 1 round of occipital nerve block, 1 round of sinus cavity injections) every 6 weeks.
  – Seeing Bio-Feedback Therapist for headaches.
  – Seeing Neuro Psych for more in-depth testing.
  – Going to chiropractors and massage therapists. Dry needling and fascia work in my head and neck.
  – Everything was still leaning right or I was dizzy all the time.
  – Double vision, fatigue, loud noises, bright lights, memory/forgetfulness, feeling slow, “not right,” etc.
No happy ever after, yet...

• By January of 2016, I had had enough and sought out other options and found myself at the Ben Hogan Concussion Center in Forth Worth, Texas.
  – Just the questionnaire alone already made me feel better in knowing they were used to seeing people like me.
  – Sent in for MRI’s and X-Rays on my Head, Neck, and Shoulder. Eventually had to see a Vascular Doctor and in July 2016, I had Thoracic Outlet Syndrome Surgery caused from the whiplash of hit.

• Asked to go see an Ophthalmologist.
  – Diagnosed with Post Trauma Vision Syndrome and Visual Midline Shift Syndrome caused from the hit.
  – Now wear glasses with a blue therapy lens to help with bright lights and a prism to “balance” things out.

• Was placed in a program called BITS which is their Brain Injury Rehabilitation Program.
  – Vision Therapy, Vestibular Therapy, and Occupational Therapy twice a week.
The Steep Rise in Concussion Diagnoses

From 2010-2015, there was an 118% increase in diagnosed concussion for girls 10-19 year old girls.

The report also shows that there was in increase of 81% in concussion patients across all ages diagnosed with post-concussion syndrome.

Baseline Testing

- What is baseline testing? And why is it important?
  - A “baseline test” is a test that is done BEFORE a concussion happens.
  - The purpose of a baseline test is to measure multiple areas of brain function that are commonly affected following a concussion. This way, if an athlete does get a concussion, they can compare their post-injury state to their baseline parameters to help make an accurate diagnosis, as well as to establish a more objective determinant of recovery and readiness to return to their sport.
  - These baseline tests and post-injury tests are computerized assessments that measure Reaction Time, Memory Capacity, Speed of Mental Processing, and Executive Functioning of the brain.

- Sample test in case you are interested:
  www.impacttestonline.com/impacttestdemo
imPACT Test

www.impacttestonline.com/impacttestdemo
Concussion Protocol

- Important to develop a Concussion Safety Protocol for any organization or club.
  - Pre-Season Education
  - Pre-Participation Assessment
  - Recognition and Diagnosis of Concussion
  - Post Concussion Management
- “When in Doubt, Sit them Out”
Return to Play

- Final determination of return-to-play is from a medically qualified physician.

- Supervised stepwise progression management plan by a health care provider with expertise in concussion that specifies:
  - Student athlete has limited physical and cognitive activity until he/she has returned to baseline, then progresses with each step below without worsening or new symptoms.
    - Light aerobic exercise without resistance training.
    - Sport-specific exercise and activity without head impact.
    - Non-contact practice with progressive resistance training.
    - Unrestricted training.
    - Return-to-competition.
Before practice, part 1

- No unsupervised play
- “Horse-Play” and “messing around”
  - Kicking balls, goofing around, and out of control play.
  - Different girls doing different things.
Before practice, part 2

• Make sure the pads are on the polls!
• No extra equipment on or around the court.
Always serve in the same direction...

- Serving Drills
  - Instead of Serve and Chase 1 ball, we now serve ALL the balls, then shag ALL the balls.
  - Limited on balls? Have a Serving group, Handing group, Shagging group.
Always hit in the same direction...

“Why do they tell me their coach said to have their back to the hitters?”

-Dr. Damond Blueitt, M.D. Concussion Specialist, P.C. Sports Medicine

• Hitting Drills
  – Instead of Hitting lines going against each other (LF vs LF), we now hit from the same side (LF and RF). Shag all the balls at the end.
  – Limited on balls? Have your defenders shag for hitters.
  – So much prevention to make sure girls don’t land on a ball, but no prevention to make sure they don’t get in the head.
Game time...
Don’t turn your back!

• Be thoughtful, Shag for your opponents
  – They won’t have to duck under the net and risk having their back to hitters. You want the same courtesy for your team.
  – Plus, saves time by starting matches on time since won’t have to run around looking for balls.
  – If they don’t offer to shag, have your defenders shag for 1 hitting line at a time. We go fast pace with the OH swinging solo, then the MH, then the RS.
  – We also will do a 6 man warm-up where we go through our offense and off hitters shag. Rotate every 6 balls.

• Don’t huddle up during the other team’s warm-up.
  – Keep eyes on the court while balls in the air.
  – Seems like common sense...only a matter of time until your players (or you) are hit in that huddle.
Key Points

• Concussions in volleyball can be reduced.
• Safe return to play guidelines must be established.
• Suggested best practices to reduce concussions include:
  – Minimize unsupervised play.
  – Always serve and hit in the same direction.
  – Shag for opposing team during warm-ups.
  – Face opponent’s servers and don’t huddle with back turned to opponent during warm-ups.