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Concussion Management in Primary Care



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Problem



- Concussion awareness is a hot topic in youth sports, resulting in increased health care visits
- There has been much change in concussion management over the past decade
- VT passed a law (Act 68) implementing a concussion management program in schools
- Not all primary care physicians are aware of how this law may affect their practice, nor are they all aware of some of the recent changes in concussion management
- Improper concussion management can lead to prolonged symptoms, recurrent injuries and long-term sequelae

Public health cost



- Each year in VT, there are 3500 ED visits for traumatic brain injuries
 - 75-80% of TBIs are concussions
 - This means a minimum of 2600 concussions/year in VT
 - Many concussions do not present to the ED
 - Up to 50% of concussions are undiagnosed
- Improper concussion management can lead to prolonged symptoms and post-concussive syndrome, which results in time lost from school and sports
 - This may have more substantial down-stream effects
- Improper management coupled with prolonged symptoms can lead to increased use of CT and MRI, as well as additional office visits

Community Perspective



- **[Name Withheld], MD – Sports Medicine Physician at VT Orthopedic Clinic (VOC)**
 - “The identification of concussions is much more difficult than the management, given proper education. There is a definite need for more education of the PCPs in the area regarding current practice and state guidelines for concussion management. The PCPs have a crucial role because they can impact and educate the parents, children and coaches.”
- **[Name Withheld] – Athletic Director of Rutland High School**
 - “We have developed a system that has worked well. Our athletic trainer sees most all athletes with a suspected concussion, coordinates the care with Dr. Gammons at VOC and manages their return to play/school in a stepwise approach. This has worked for us because the trainer has a close relationship with the athletes, and it is a more individualized approach. Not all schools have this available, however.”
- **[Name Withheld] – Rutland Recreation Department**
 - “We have focused on educating our coaches to identify concussion. We tell them to have a low threshold for suspecting a concussion. After identification, we ask the parents to bring their child to their PCP to be cleared for participation. I would like to be able to offer more in the future.”
- **[Name Withheld], MD – PCP at Rutland Community Health Center**
 - “I think there is still some confusion about how the new law affects the way we practice and what our role is regarding concussion management. There has also been a lot of change in the way we approach concussions over the past decade, and it would be helpful to address the current guidelines.”

Intervention



- After researching concussions and current management principles, as well as interviewing an expert in the field, I presented my findings to a group of nurses, PAs and MDs at Rutland CHC in the form of a 45-min powerpoint presentation with discussion
- The goal was to give background information about concussions and their diagnosis, to summarize the VT law (Act 68) concerning concussions and to give examples of concussion management protocols available
- I also hoped to learn from their experience in managing concussions, and whether they felt that what I presented was feasible to implement in the primary care setting
- We worked through a case of a child that suffered a concussion and discussed the various questions that might come up during the course of recovery
- I also distributed examples of return to school and return to play protocols (from BIAVT) that could be used as hand-outs to patients and their families

Response



- The result was a dynamic discussion of past experiences, frustrations and successes of concussion management:
- “I didn’t realize the timeframe for concussion recovery could be so variable”
- “I had no idea the limitations necessary in the acute post-concussive period, such as no TV, reading, texting or video games. This would be difficult to monitor and enforce as a parent.”
- “I know some physicians who are still recommending 2 weeks of rest and then full return to sports, which is very different from the current guidelines”
- “I think the protocols are something I would use in my everyday practice”
- “I am still concerned about the communication at the middle school level regarding concussion management. There is a lot of responsibility on the parents, and they are not always well-educated in the area of concussions.”
- Overall, I believe the group was very engaged. They stated they felt the information I provided was helpful, would impact the way they practiced, identified areas of continued concern, and they suggested giving a similar talk to more providers including the ED and pediatrics.

Effectiveness and Limitations



- **Strengths:**

- Intimate group setting allowed for active discussion and problem-solving
- I was able to learn from their successes and frustrations regarding concussion management
 - ✦ For example, some members noted that the parents were often overly aggressive in returning their child to sports, and typically needed more communication/education
 - ✦ The providers also noted an increased awareness of head injuries in their patient population, and found this discussion to be helpful in staying up to date on current practices

- **Limitations:**

- Small group size – I wasn't able to reach as many providers as I would have liked to, being limited to one geographical area
- The group identified that more specialties should be involved, such as ER and pediatrics
- The group was unsure about how realistic some of the suggestions regarding return to learn protocol and the limitations suggested by the guidelines

Future Work



- Present this work to PCPs, ER docs and pediatricians to increase awareness of current guidelines
- From experience, the group identified that children at the middle school level and those involved in non-school sponsored sports are at increased risk for poor follow-up compared to high school athletes
 - A future project could focus on establishing a concussion management program at the Rutland Recreation Department, where there is none to date. The goal could be to improve communication between the child, parents, school and PCP, because there is no established framework by which to guide communication between all parties.

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