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CASE REPORT

Anisocoria as the Sole Initial Symptom of Concussion in a Collegiate Volleyball Player: A Case Report

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Background: A 21-year-old female collegiate volleyball player reported to the athletic training staff after a competition upon noticing that her pupils were unequal. The patient stated that she was not experiencing any other signs or symptoms that would indicate a concussion, but did recall striking her head on the court during pre-competition warmups. The patient reported no previous history of concussion or eye injury. Further evaluation did not reveal any issues with the patient's reflexes, balance, or memory. At this time, the decision was made to preemptively withhold the patient from participating in athletic activities so she could be monitored for the development of further signs and symptoms. **Differential Diagnosis:** Concussion, Oculomotor Nerve Palsy, Acute Eye Trauma **Treatment:** Approximately six hours after the patient was removed from competition, the patient began experiencing a headache and pressure in her head. The onset of new symptoms furthered the athletic training staff's belief that the patient had sustained a concussion when she struck her head. The coaching staff was then informed that the patient would be admitted into the institutional concussion protocol, and not allowed to participate in physical activity until receiving clearance from the athletic training staff. Two days after the patient began experiencing symptoms she was evaluated by the team physician who confirmed the diagnosis of a concussion. With the confirmed diagnosis, the patient continued to be withheld from team activities and was instructed to abstain from all other activities that increased severity of symptoms. Within four days of experiencing symptoms, the patient's pupils were symmetrical once again. The patient's headache and sensation of pressure had resolved within five days. On day six, the patient began the institutional return to participation protocol. Twelve days from the onset of symptoms, the patient was cleared to return to full participation in team activities. For the remainder of the season, the patient did not experience anisocoria or any of the previously experienced symptoms. **Uniqueness:** To the authors' knowledge, no previous case studies or original research have described anisocoria as the only initial symptom that a patient experienced following a concussion. Given that anisocoria is not one of the more common signs or symptoms of concussion, it is possible that the concussion would not have been recognized had the patient not self reported her asymmetrical pupils. **Conclusions:** When caring for patients, it is paramount that the clinician take into account all patient reported signs and symptoms. In the event that a patient reports an unusual sign or symptom, the clinician must exhaust all possible options to explain the sequelae. Furthermore, thorough preparticipation concussion education is critical to helping patients understand the importance of reporting symptoms after potentially concussive trauma.