Male Collegiate Football Player with Testosterone Deficiency and Pituitary Apoplexy Secondary to Concussion  
  
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**Background**: An 18 year old male collegiate offensive lineman football player presents with pituitary apoplexy after sustaining a concussion in the beginning of the football season. Upon initial examination, the patient was conscious but disoriented and reported a headache after sustaining a “head to head” hit during a line drill. Patient complained of photophobia and nausea. Past medical history included previous head injury from a car accident and recurrent migraines, which were controlled through medication. Patient was neurovascularly intact and presented with no positive special tests. Take home instructions were provided and patient was advised to seek appropriate medical care if condition worsened.  

**Differential Diagnosis**: Severe migraine, concussion, cervical spine injury, pituitary apoplexy, subdural hematoma and epidural hematoma.  

**Treatment**: The patient was taken out of play and monitored. He abstained from taking any medications in order to prevent the masking of any concussion related symptoms. Two days post-injury, the patient was ambulated to the hospital secondary to exacerbated symptoms. At the hospital, the patient underwent a Computer Tomography (CT) scan, which showed a mass expanding the sella turcica, which is a round bony cavity which holds the pituitary gland. To further clarify the mass a Magnetic Resonance Imaging (MRI) was ordered which revealed a lesion of the pituitary gland suggesting a macro-adenoma (tumor). The patient then consulted with an endocrinologist. After reviewing the diagnostic images the endocrinologist felt that the macro-adenoma (measuring 1.7 x 2.1 x 2.2 cm) was not inhomogeneous (not solid) suggesting pituitary apoplexy (macro-adenoma hemorrhage). Blood work revealed low testosterone and a high level of prolactin. Treatment consisted of rest and removal from football activity for the remainder of the season. The patient was permitted participation in aerobic activities and light weight lifting. Furthermore the patient was prescribed a medication to help shrink the macro-adenoma with the intent that it would indirectly regulate his levels of testosterone.  

**Uniqueness**: Traumatic Brain Injuries (TBIs) that result in abnormalities of the pituitary are usually caused by severe acceleration (e.g. blast-related military injuries, or from sports such as boxing and kickboxing) or severe deceleration (e.g. car or skiing and sledding accidents). In these cases the pituitary stalk connecting the pituitary gland to the rest of the brain is damaged or severed. Studies show that pituitary damage can also occur due to mild multiple head traumas. Pituitary apoplexy of a pituitary adenoma is thought to typically occur spontaneously, though other cases such as this, where relatively minor head trauma causes adenoma apoplexy, have also been described.  

**Conclusions**: Athletic trainers need to be aware that even mild head injuries can result in pituitary damage such as apoplexy, which may lead to hormonal imbalances. Further imaging and blood work may be required which underscores the importance of effective communication between athletic trainers and physicians. Proper primary care and continued treatment of such injuries needs to be emphasized. The medication prescribed to decrease the size of the pituitary adenoma was successful as proven by a follow-up MRI where that the macro-adenoma decreased to one third of its original size and by blood work indicating that hormone levels returned to normal. After receiving a physical examination the patient was declared healthy and able to fully participate in athletic activity next season.

**Word Count**: 537