



# ANXIETY INDUCED BILATERAL NEUROVASCULAR SYMPTOMS IN A 21 YEAR-OLD COLLEGIATE FOOTBALL PLAYER



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BACKGROUND	TREATMENT	UNIQUENESS
<p><b>PATIENT</b></p> <ul style="list-style-type: none"> <li>• 21 year-old football athlete</li> </ul> <p><b>HISTORY</b></p> <ul style="list-style-type: none"> <li>• Patient reports to Athletic Trainer (AT) complaining of a “weird feeling” in both hands and distal forearms.</li> <li>• Patient describes feeling as “numbness and tingling” every time he would “reach into his pockets”.</li> <li>• The patient complained of bilateral neurovascular symptoms, but could not attribute a specific MOI from the football came prior to these symptoms.</li> <li>• The patient was experiencing no pain or any symptoms at the location of his spinal cord.</li> <li>• Patient has experienced this feeling in the past and reports that he has anxiety.</li> </ul> <p><b>OBSERVATION</b></p> <ul style="list-style-type: none"> <li>• No obvious deformity or observable findings.</li> </ul> <p><b>ROM/Strength</b></p> <ul style="list-style-type: none"> <li>• Full ROM</li> <li>• Full strength measured with manual muscle testing</li> <li>• Patient was frustrated that he could not participate even with full strength.</li> </ul> <p><b>Neurological Examination</b></p> <ul style="list-style-type: none"> <li>• Patient reported altered sensation in C6-T1 nerve root patterns.</li> <li>• Sharp-Dull test findings reported normal</li> <li>• Patient reports dissipation of symptoms at around 1 week</li> </ul>	<p><b>INITIAL CARE</b></p> <ul style="list-style-type: none"> <li>• Patient was held from contact drills.</li> <li>• Patient referred to team physician.</li> <li>• The findings were inconsistent with any nerve root patterns; however, they still suggested a serious, spinal cord related injury. If allowed a premature return-to-play, the patient’s condition could worsen.</li> </ul> <p><b>PHYSICIAN FOLLOW UP</b></p> <ul style="list-style-type: none"> <li>• The patient saw the team physician for a follow-up, and still reported no obvious findings 5 days after reported injury.</li> <li>• Referred for an MRI, but patient’s insurance company required 6 weeks of Physical Therapy with persisting symptoms.</li> <li>• The timeline that the insurance company established meant that this would be a season-ending injury for the patient.</li> <li>• The patient’s symptoms subsided during this time.</li> <li>• The x-rays came back negative, including normal foraminal spacing.</li> </ul> <p><b>TREATMENT</b></p> <ul style="list-style-type: none"> <li>• Patient did not participate in practice until symptoms had subsided for 24 hours.</li> <li>• The patient and his guardian were thoroughly informed about the possible severity of the conditions associated with bilateral neurovascular symptoms and return to play.</li> <li>• The patient and guardian understood explanations, and the physician cleared the patient with proper progression by an AT.</li> </ul> <p><b>RETURN TO PLAY</b></p> <ul style="list-style-type: none"> <li>• The patient had his follow-up with the physician on a Thursday afternoon when he was referred for the MRI. In this time, the patient had to miss participation in a football game on Saturday.</li> <li>• After clearance from the physician to allow for the AT to construct a progression, the patient was progressed as followed:             <ul style="list-style-type: none"> <li>• Running, non-contact drills, controlled contact, and full contact.</li> <li>• Each phase was performed 24 hours apart from the previous ones, and the patient was monitored for any reappearance of symptoms.</li> </ul> </li> <li>• There was never a return or exacerbation of symptoms.</li> <li>• Patient was monitored throughout the remainder of the football season.</li> </ul>	<ul style="list-style-type: none"> <li>• Bilateral neurovascular symptoms are typically associated with traumatic injury or chronic condition to the spinal cord. This patient had no mechanism of injury or diagnosed neurological conditions.</li> <li>• The patient had full strength in the areas of altered sensation, when deficits would normally be present with a neurological injury. His “tingling” sensations also did not follow a specific nerve root pattern, leading to the conclusion that the patient’s anxiety was the causing factor.</li> <li>• The symptoms dissipated in approximately 1 week with no rehabilitation or treatment.</li> <li>• The insurance company would not allow for the physician’s recommended imaging, leaving a progression and close monitoring up to the AT.</li> </ul>
<b>RELEVANT EVIDENCE</b>		
<ul style="list-style-type: none"> <li>• Mitchell et al.<sup>1</sup> discussed that MRIs are the method of diagnosing traumatic neurological injuries, and without imaging 4-6 weeks of rest is usually recommended prior to return to play. These injuries are rare in athletics and are typically classified as Transient Neuropraxia, which is generally not a bilateral condition.<sup>1</sup></li> </ul>		
<b>CONCLUSIONS</b>		
<ul style="list-style-type: none"> <li>• Any injury that presents with neurological signs and symptoms should not be taken lightly, as these injuries can lead to serious conditions, paralysis, or death.</li> <li>• Regardless of a patient’s strength, lack of mechanism, or countering factors in the case, ATs should protect the patient and refer to a physician for precaution.</li> <li>• In this case, due to disappeared symptoms, normal x-rays, and physician clearance, this patient was gradually returned to play by the AT, and was consistently monitored after.</li> <li>• Due to frequent consultation and communication with the team physician and the AT’s understanding of the patient personality, the AT was trusted to set-up a progression.</li> </ul>		
<b>REFERENCES</b>		
<p>1. Mitchell CH, Brushart TM, Ahlawat S, Belzberg AJ. MRI of sports-related peripheral nerve injuries. <i>American Journal of Roentgenology</i>. 2014;203(5): 1075-1084.</p>		

**DIFFERENTIAL DIAGNOSIS**

- Anxiety
- Thoracic Outlet Syndrome (TOS)
- Spinal Cord Contusion
- Syringomyelia