



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



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BACKGROUND

PATIENT

- 21 year-old football athlete

HISTORY

- Patient reports to Athletic Trainer (AT) complaining of a “weird feeling” in both hands and distal forearms.
- Patient describes feeling as “numbness and tingling” every time he would “reach into his pockets”.
- The patient complained of bilateral neurovascular symptoms, but could not attribute a specific MOI from the football came prior to these symptoms.
- The patient was experiencing no pain or any symptoms at the location of his spinal cord.
- Patient has experienced this feeling in the past and reports that he has anxiety.

OBSERVATION

- No obvious deformity or observable findings.

ROM/Strength

- Full ROM
- Full strength measured with manual muscle testing
- Patient was frustrated that he could not participate even with full strength.

Neurological Examination

- Patient reported altered sensation in C6-T1 nerve root patterns.
- Sharp-Dull test findings reported normal
- Patient reports dissipation of symptoms at around 1 week

DIFFERENTIAL DIAGNOSIS

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

TREATMENT

INITIAL CARE

- Patient was held from contact drills.
- Patient referred to team physician.
- 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.

PHYSICIAN FOLLOW UP

- The patient saw the team physician for a follow-up, and still reported no obvious findings 5 days after reported injury.
- Referred for an MRI, but patient’s insurance company required 6 weeks of Physical Therapy with persisting symptoms.
- The timeline that the insurance company established meant that this would be a season-ending injury for the patient.
- The patient’s symptoms subsided during this time.
- The x-rays came back negative, including normal foraminal spacing.

TREATMENT

- Patient did not participate in practice until symptoms had subsided for 24 hours.
- The patient and his guardian were thoroughly informed about the possible severity of the conditions associated with bilateral neurovascular symptoms and return to play.
- The patient and guardian understood explanations, and the physician cleared the patient with proper progression by an AT.

RETURN TO PLAY

- 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.
- After clearance from the physician to allow for the AT to construct a progression, the patient was progressed as followed:
 - Running, non-contact drills, controlled contact, and full contact.
 - Each phase was performed 24 hours apart from the previous ones, and the patient was monitored for any reappearance of symptoms.
- There was never a return or exacerbation of symptoms.
- Patient was monitored throughout the remainder of the football season.

UNIQUENESS

- 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.
- 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.
- The symptoms dissipated in approximately 1 week with no rehabilitation or treatment.
- The insurance company would not allow for the physician’s recommended imaging, leaving a progression and close monitoring up to the AT.

RELEVANT EVIDENCE

- Mitchell et al.¹ 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.¹

CONCLUSIONS

- 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.
- 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.
- 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.
- 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.

REFERENCES

1. Mitchell CH, Brushart TM, Ahlawat S, Belzberg AJ. MRI of sports-related peripheral nerve injuries. *American Journal of Roentgenology*. 2014;203(5): 1075-1084.