Camptocormia: Pathogenesis, Classification and Response to Therapy

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ABSTRACT

Initially considered a psychiatric disorder, camptocormia, an abnormal posture with marked flexion of the thoracolumbar spine, which alleviates in the recumbent position, is becoming an increasingly recognized feature of parkinsonian and dystonic disorders. Prior reports were limited by sample size, lack of formal blinded data or response to therapy. We report fifteen patients with clinical features consistent with camptocormia. In addition to detailed neurological assessment all patients were videotaped. The male to female ratio was 10:5. The mean age at onset was 65.0 ± 17.9 years, and the mean duration of disease was 15.6 ± 9.9 years. For the 15 patients, 12 (80.0%) had clinical or laboratory evidence of PD. The diagnosis in the other patients included: additional dystonia (4) and Tauopathy (1). All eleven patients with PD received levodopa, with minimal or no improvement in their camptocormia. Eight patients received botulinum toxin injections into the rectus abdominus and iliopsoas. None of the patients had a history of clonazepam use with one exception of levodopa. We did not observe significant amelioration of camptocormia in the remaining patients. Baclofen and fentanyl infusion without noticeable improvement in her symptoms. She received BTX injections into rectus abdominus, continuous intrathecal baclofen and tetrabenazine with no improvement in her symptoms. She received BTX injections into rectus abdominus, continuous intrathecal baclofen and tetrabenazine with no improvement in her symptoms. She received BTX injections into rectus abdominus, continuous intrathecal baclofen and tetrabenazine with no improvement in her symptoms.

RESULTS

Table 4: Classification of Camptocormia

1. Parkinsonism:
   a. Idiopathic parkinson's disease (10,12)
   b. Multiple system atrophy
   c. Focal dystonia
   d. Hemiballism
   e. Other dystonias

2. Dystonia
   a. Primary Dystonia
   b. Secondary Dystonia

3. Sleep abnormalities
   a. Periodic limb movements
   b. Sleep disorders

4. Neuromuscular disorders
   a. Amyotrophic lateral sclerosis
   b. Multiple sclerosis
   c. Charcot-Marie-Tooth disease

5. Ischemic stroke

Table 2: Treatment Outcomes (N = 15)

- Physical therapy
- Medications: amantadine, and bilateral STN
- Additional physical therapy
- Botulinum toxin injections
- Baclofen and fentanyl infusion

Table 1: Camptocormia: Demographics (N = 15)

- Age: Mean 65.0 ± 17.9 years, range 40 - 87 years
- Gender: Male: Female = 10:5
- Diabetes: 3/15 (20%)
- Hypertension: 10/15 (67%)
- Dysarthria: 12/15 (80%)
- Depression: 7/15 (47%)
- Hemiballism: 2/15 (13%)
- Parkinson's disease: 11/15 (73%)
- Stroke: 1/15 (6%)
- Multiple system atrophy: 2/15 (13%)
- MSA-P: 1/15 (6%)
- Dystonia: 2/15 (13%)
- Sleep disorders: 3/15 (20%)
- Neuromuscular disorders: 2/15 (13%)
- Ischemic stroke: 1/15 (6%)

ASSOCIATED CLINICAL FEATURES

- Presence of psychiatric illness
- Presence of memory impairment
- Presence of ophthalmologic abnormalities
- Presence of attentional impairment
- Presence of frontal lobe dysfunction
- Presence of gait and falls
- Presence of orthostatic hypotension
- Presence of positive or negative visual hallucinations
- Presence of visual field defects
- Presence of extrapyramidal signs
- Presence of non-motor symptoms
- Presence of autonomic dysfunction
- Presence of cognitive impairment
- Presence of dementia
- Presence of stroke
- Presence of multiple system atrophy
- Presence of motor neuron disease
- Presence of Parkinson's disease

CONCLUSION

Simple motion retraining eliminating the disorder in the thoracolumbar region may alleviate camptocormia (17) and impinge upon the nature of the coexisting disorder. Our data supports the notion that shaking of the limbs may be a manifestation of the spectrum of underlying disorders.

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