A Note on Bent Spines: 'Camptocormia' and 'Head Ptosis'

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Many deplore the journalistic trend to label well-recognized conditions by acronyms, or by recently invented names – commonly to no useful purpose. Head ptosis (syn head drop) is an allied condition, but why perpetuate the ungainly phrase head ptosis? Ptosis (Greek for falling) has traditionally been applied only to the upper eyelid and to prolapse of any of the viscera. The phrase 'Head drop' is short, its meaning unequivocal. Camptocormia (Greek *karmos* bent + *kormos* trunk of a tree) is a similarly clumsy term applied to signify a bent spine. It is an ostentatious word that portends something more arcane than a bent back or neck [1].

Some degree of spinal flexion is almost invariable with normal ageing, osteopenia plays a part, but the mechanisms are not fully understood. It becomes pathological when causing symptoms or disability. Both head ptosis and camptocormia occur mainly in those over the age of 60. Idiopathic camptocormia is uncommon, evident as involuntary trunkal flexion when the patient is erect [2]. It lessens when the patient is supine, a sign used to exclude the fixed deformities of ankylosing spondylitis and degenerative spondylosis [3]. Head drop and camptocormia include protean disorders that affect different parts of the spine resulting in abnormal and sometimes painful, disabling kyphosis (Greek *ku* = --fo--s = crooked). Many are of unknown cause. When severe, patients are so bent that many normal activities are difficult or impossible.

Camptocormia was reported as a psychogenic illness among soldiers in both World Wars [4, 5] and was subse-

quently so regarded [6, 7]. Souques in 1915 [8] originally used the term camptocormia. Rosanoff-Saloff provided a photographic record of Souques' case study of a soldier's bent back and his recovery. According to the English translation in Southard's collection of shell shock cases [9], this soldier was wounded 5 months previously by a bullet that entered near the scapula and emerged near the spine.

'He spat blood for several days ... and when he got up his trunk and thighs were found to be in a state of moderate flexion upon the pelvis, the trunk being bent almost at a right angle.' He was able to bend his trunk still further forward than 'its habitual contracted position' and it was evident that there was contraction of the muscles of the abdominal wall and of the iliopsoas. 'No motor, sensory, reflex, trophic, vasomotor, electrical, visceral or X-ray disorders could be found.'

The application of plaster corsets 'cured' this man's deformity within six weeks [10]. It was known as *cintrage* (arching), suggesting that it was a common amongst French soldiers [11]. Roussy and Lhermitte reported subsequent cases (Southard):

'An infantryman was thrown into the air by the bursting of a shell, rendered unconscious and recovered experiencing violent pains in the back. He remained stooped to the right. His bent back was corrected by the application of plaster corsets. Another reported case was a chasseur who was buried in an explosion, knocked unconscious, and experienced acute respiratory distress, and subsequent mutism and camptocormia. One séance of

Table 1. Some causes of bent spine (camptocormia)

Bone or joint	osteopenia, spondylitides, spondyloses
Neuromuscular	myoneural junction disorders
Motor neuron	amyotrophic lateral sclerosis
Muscle	inclusion body myositis, nemaline myopathy, facioscapulohumeral dystrophy
Parkinsonism	idiopathic/postencephalitic, multisystem atrophy
Miscellaneous	villiusk encephalomyelitis; sodium valproate toxicity
Idiopathic	

After Umapathi et al. [3].

electrical treatment corrected the improper attitude of the trunk, though he did continue to experience “a few persistent lumbar pains”.

Macleod comments that psychological factors influenced these men’s recuperation.

However, it is reported in various organic neurological disorders [11–13], including myopathies [14], myasthenia gravis, ALS [15], extrapyramidal disorders – especially dystonias, multisystem atrophy, and both postencephalitic and idiopathic Parkinsonism [16, 17]. The commoner spondylitides and spondyloses are generally excluded because the deformity is fixed in all postures; but in Parkinsonian syndromes [18] this is also true, though variably improved by dopaminergic treatments.

In idiopathic camptocormia, selective investigations are indicated, but usually unrevealing with minor or non-specific findings. Creatine kinase level usually is normal or slightly elevated. MRI scans have suggested non-specific muscle atrophy. Electromyography of paraspinal muscles may show fibrillations and short-duration, small-amplitude motor unit action potentials, but limb muscles

are generally normal. Biopsy of the paraspinal muscle is usually unhelpful: mild, non-specific abnormalities such as variation in size, fibrosis and minimal inflammatory infiltrates may be seen. However, paravertebral muscles develop pathological abnormalities with increasing age with both neurogenic and myopathic features, of multifactorial pathogenesis [19]. In idiopathic cases, unproven theory suggests age-related loss of muscle tone and elasticity, chronic stretch and denervation of the paraspinal muscles from degenerative spinal disease are the mechanisms [20].

Camptocormia is usually progressive. In a few reported examples, it has responded to electrotherapy or to corticosteroid medications, but in many, it defies all treatments [21]. Deep brain stimulation of the medial globus pallidus interna has been claimed to produce a gradual but partial improvement, which supports the notion of a segmental dystonia [22].

Head drop and camptocormia are usually unrelated but they share certain common features. Both occur mainly in the elderly; both can occur in the same patient, and they have some similar neuromuscular and extrapyramidal causes.

Conclusion

The idea that idiopathic camptocormia is a distinct entity seems improbable. Weakness of the extensor muscles, or altered tone of the flexor muscles characterize the anterior curvature of the bent spine. Camptocormia and head ptosis are inelegant descriptive terms of many different organic and functional disorders of spinal posture arising in the nervous system at different levels. They can inflict considerable disability, but their cause in many instances is unknown and demands judicious investigation (table 1).

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