

## INDIVIDUAL STUDY

### *Headache and giddiness of cervical origin*

R. G. D. NEWILL, M.D., M.R.C.G.P.

King's Langley, Hertfordshire

IF WE WANT TO BE PARTICULARLY abusive about someone we tend to refer to him or her as "a pain in the neck". This description recognizes that pain in the occipital region can be severe, prolonged and exceptionally trying to the patient and those in close contact with him.

Pain in the occipital region of the skull or which originates in the occiput and radiates over the scalp to the frontal or retro-orbital region is a common symptom seen in general practice. Frequently the patient, particularly in children and young women, complains only of aching behind the eyes and attributes this to eye strain. An optician is generally unable to find any abnormality on refraction. It is not generally realized that the origin of frontal headache or retro-orbital pain is most commonly in the nuchal region of the upper cervical spine and in the attachment of the neck muscles to the occiput.

Many cases of giddiness or dizziness, particularly in people of an anxious personality, also have a cervical origin and are due to prolonged spasm of the cervical muscles. The basic cause of both headache and giddiness of cervical origin is chronic spasm of those muscles which support the head on the neck, in particular the anterior, lateral and posterior recti and the superior and inferior obliques.

This syndrome has, in the past, been given various names such as "cervical headache", "cervical migraine" and "tension neck syndrome". The last is probably the most accurate as it recognizes the main cause of the disease and does not specify one particular symptom of the syndrome as does "cervical headache" or "cervical vertigo".

Chronic spasm of the neck muscles may be due to an organic lesion but much more commonly it is psychogenic. The more common organic lesions are:

1. Arthritis of the cervical spine.
2. Cervical spondylosis.
3. Local infection around the cervical muscles, e.g. cervical adenitis.
4. Foci of pain in eyes, ears and sinuses.
5. Whiplash and other injuries to the cervical muscles and ligaments.

All these will cause pain in the joints or muscles of the neck leading to a protective spasm of the muscles. In children the cause may be bad posture, with the head not held erect on the neck. Most cases seen in a general practitioner's consulting room come within a younger age group who would not normally suffer from severe spondylitis or arthritis. The cause in these patients, almost invariably women, is psychogenic although in not all of them is an anxious personality immediately recognizable.

In grazing quadrupeds sudden alarm will cause them to raise their heads by contracting the posterior cervical muscles, and in primitive man the head was probably also raised at the first hint of danger. Since anxiety is a form of chronic fear it seems probable that this chronic spasm of the posterior neck muscles in anxious people is a vestige of evolution. Sometimes a lumbar disc lesion will also cause headache and giddiness due to spasm of the long spinal muscles which stretch from the sacrum to their insertion in the base of the skull.

Why then should persistent spasm of the neck muscles result in headache, particularly muscles which stretch from the sacrum to their insertion in the base of the skull?

Why then should persistent spasm of the neck muscles result in headache, particularly frontal and retro-orbital headache and giddiness?

In 1944, Douglas Campbell and Clare Parsons in Los Angeles demonstrated the relationship between the occipital and orbital areas of the skull by injecting 6 per cent saline solution into the tissues of the occipito-atlantal condylar region and also into the 1st cervical interspace posteriorly. They found that pain was produced predominantly in the frontal and retro-orbital regions by injections into the occipito-atlantal area and predominantly in the vertex and occipital regions by injections into the first cervical interspace. Many patients who suffered from frontal and retro-orbital headaches described them as exactly similar to those produced by these hypertonic saline injections. Campbell and Parsons attributed these findings of the connection between the occiput and the frontal area to the shuffling of myotomes during evolution.

The posterior neck muscles are part of the proprioceptive nervous system which controls posture and balance and there are many nervous connections between the proprioceptive nerve endings in these muscles and the semicircular canals and the eyes. The posterior neck muscles are in direct connection with the exterior ocular muscles via the medial longitudinal fasciculus. Dynamic posture reflexes come from the muscles supporting the head on the neck and since there are nervous connections between these muscles and the semicircular canals via the spinovestibular tracts it is not surprising that over-stimulation of the nerve endings in the neck muscles can cause giddiness.

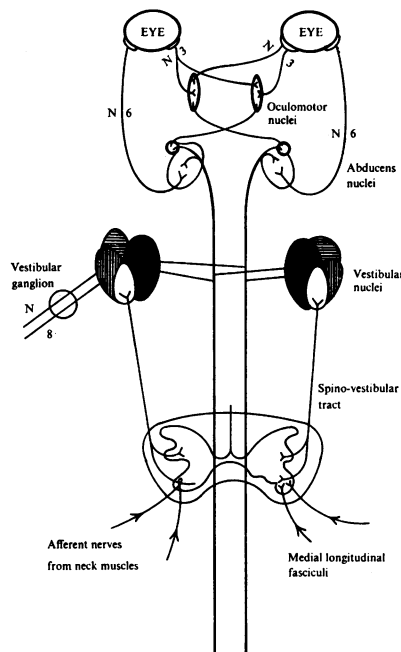


Figure 1.

A diagram showing nervous connections between neck muscles, eyes and semi circular canals.

Frontal and orbital aching result from chronic strain of the tendinous insertions of the posterior neck muscles to the region round the atlanto-occipital joint and this is possibly analogous to the chronic strain of the common extensor tendon at the elbow in the condition of tennis elbow.

As well as chronic spasm of the neck muscles being a cause of pain in the head and eyes the reverse can also happen. Wolff (1963) showed that chronic disease of the sinuses can cause sustained muscle contraction in the neck.

### Diagnosis

In any patient complaining of giddy attacks, dizziness or headache, particularly on top of the head, behind the eyes or in the frontal area the possibility of persistent spasm of the upper

cervical muscles should be considered. This is most commonly due to anxiety or cervical spondylosis in the elderly, chronic anxiety in the middle age group or bad posture in teenagers and children. The latter commonly walk around with their chins jutting forward and with consequent over-contraction of the posterior neck muscles to keep their heads upright. It is likely that cervical spondylosis in many old people is the result of a lifetime of muscle spasm caused by chronic anxiety.

Pressure on the sub-nuchal line at the level of the insertion of trapezius is generally exquisitely painful and often firm pressure at this point on the base of the skull will cause pain to be referred to the frontal region. It is particularly common in anxious women with unilateral headache who consider themselves to be sufferers from migraine to find this very tender spot in the nuchal area but only on that side of the head which is affected by headache.

#### **Treatment**

This is difficult since the condition is chronic and is generally due to an irreversible cervical spondylitis or to an incurably anxious temperament. It can be relieved for a time by drugs such as chlordiazepoxide or meprobamate which have some muscle relaxing properties as well as a tranquillizing action. Long-wave infra red heat to the occipital area helps if the patient has her own infra red heat lamp and occasionally a hydrocortisone-lignocaine mixture injected deeply into the tendinous insertions of the small posterior neck muscles works wonders, but whether this good effect is analogous to the relief of tennis elbow by the same treatment or to the wisdom of attempting this injection in a highly neurotic patient is doubtful.

Manipulation of the cervical spine can be attempted in some cases if there is not too much sub-nuchal tenderness. This generally only results in temporary relief but is worth attempting. The patient sits on a chair and the doctor stands behind her placing one hand under her chin and the other on her occiput. He then stretches her head upwards and twists it sharply to the right. This is followed by the same manipulation to the left. If there are any satisfying cracking noises the doctor can reassure the patient that the fibrous bands which were the cause of her trouble have undoubtedly been broken down.

#### **REFERENCES**

- Campbell, D. and Parsons, C. (1944). *Journal of Nervous and Mental Disease*, **99**, 544.  
Wolff, H. G. (1963). *Headache and Other Head Pain*, 2nd edition. New York: Oxford University Press.
- 

#### **REVIEW BODY REPORT**

The Review Body on Doctors' and Dentists' Remuneration reported in December 1971. Recommendations for a 4.9 per cent increase in gross fees and allowances from executive councils have been made. It is estimated that in round figures the recommendations will result in an average net remuneration for general practitioners of £5,185 per annum. The Review Body estimates that practice expenses in the year 1971-72 will average £2,080 per general practitioner.

Increases in the consultant scale (without merit awards) are recommended, the new rates being from £4,512 to £6,840 at the top of the scale. An increase in the number of merit awards to 4,210 is proposed.

The target average net income for dentists in the National Health Service for the year beginning 1 April 1971 is being increased to £4,653 per annum.