Conclusion

Nothing perhaps requires greater emphasis in this paper than that all these points concerning technique should be thoroughly understood by the nursing staff. Some of them may seem trivial, but it is only by constant attention to these details that this method of continuous intravenous drip transfusion will consistently give the good results which are justly claimed for it.

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TRIGEMINAL NEURALGIA AT AN EXCEPTIONALLY EARLY AGE: CURED BY GASSERIAN ALCOHOL INJECTION

BY

WILFRED HARRIS, M.D., F.R.C.P.

Physician to Maida Vale Hospital for Nervous Diseases; Consulting
Physician to St. Mary's Hospital

Paroxysmal trigeminal neuralgia—or, better, trigeminal tic—is usually a disease of the latter half of life, four-fifths of all cases starting within the three decades 41–70 and more than one-third in the decade 51–60. Yet occasionally young people are attacked, for I have had more than twenty patients who began to suffer before the age of 21—two of them at the age of 12. The earliest hitherto recorded case in my knowledge is that of a boy aged 10 operated on by Mr. Barclay (1922) of Newcastle.

Case History

I have now to record the case of a girl who had been suffering since the age of 16 months from frequently repeated daily spasms of pain, lasting a few seconds only, and referred to the left lower jaw up to the ear. She was a Caesarean baby, weighing 9 lb. at delivery, and between the ages of 4 and 5 months had won no fewer than four prizes at baby shows. Yet her dentition did not start until she was 12 months old, and from the age of 16 months she began to have obvious pains with her teeth, paroxysms of a few seconds' duration occurring frequently during the day, and often waking her, screaming, at night. At first the neuralgic attacks seemed to affect both sides, until she completed her milk dentition at the age of 3 years—a year later than the average. Since then the attacks have been definitely limited to the left side, being referred along the lower jaw to the ear, and lasting a few seconds only.

She was first brought to me on July 3, 1942, when less than 4½ years old, and on several occasions I witnessed the sudden attacks of pain, lasting only from a few seconds to a quarter of a minute, the child immediately afterwards becoming quite normal in behaviour. Radiographs of the mandible showed no bone or dental abnormality. She had previously been treated at Great Ormond Street Hospital, and drugs seemed to have no influence on the neuralgic spasms, so I decided on alcohol injection of the foramen ovale. This I attempted on Aug. 21 under preliminary rectal paraldehyde and then ethyl chloride inhalation. No co-operation with the little patient was possible by such a method, and the result was not good: anaesthesia of the third division was slight, if any, and freedom from pain lasted only a couple of days. Three other attempts were made under general anaesthesia in September and November, using the lateral route, without obtaining lasting trigeminal anaesthesia, though after the injection on Nov. 18 she had very few attacks of pain for ten days, then relapsing as before. On Dec. 9 I again injected under a general anaesthetic, using the anterior route in front of the coronoid process, and this time produced complete left trigeminal anaesthesia, after injecting 8 minims of 90% alcohol into the Gasserian ganglion. The neuralgic spasms died away within two days, and she has had no further signs of neuralgia up to the present time—seven months after the injection—though some keratitis developed during the last week of December, with some temporary loss of the superficial corneal epithelium. She was taken into Maida Vale Hospital at once, and the keratitis cleared up completely under treatment, and the cornea now shows no sign of opacity or scar. With the exception of a mild attack of German measles while being treated for the keratitis she has remained perfectly well, and, though the trigeminal anaesthesia persists unaltered, the child does not appear to take notice of it, and is quite merry and bright.

Comment

As regards the prognosis, it is quite probable that the cure will be permanent, as I have found in numerous other similar cases in adults. There is a possibility of recurrence of neuralgia on the other side, for I have met with bilateral trigeminal tic in at least 100 cases, and its incidence, in my experience, seems to be between 4 and 5% of the total cases seen. Sometimes the neuralgia appears on both sides within the period of a week, but more often there is an interval of several years. One of my patients, a lady of 64 when I first saw her eighteen years ago, had suffered since the age of 12 with typical neuralgic tic on the right side of the face—that is, for 52 years. Gasserian injection cured that pain completely; but fifteen years later, when she was 79, similar neuralgia attacked the left side, and I had to inject the left Gasserian ganglion also, thus numbing both sides of her face completely. Sixty-seven years therefore separated the onset of the neuralgia on the two sides. The left motor root had recovered after the first Gasserian injection, as is usually the case, and therefore she had no jaw-drop after the second Gasserian injection.

The probability of bilateral pain probably increases with the length of duration of the disease, so that in the case of the child described above, whose pain was at first bilateral, there is a distinct possibility that the pain may recur at some future date on the right side.

As regards the aetiology of trigeminal tic, it is usually stated in medical and neurological textbooks that the cause is unknown. I have for many years been convinced that the cause is an infective neuritis of the trigeminal-nerve endings in the maxilla or mandible, in the large majority of dental origin, though occasionally secondary to antral infection. This view I have consistently taught, and have published on various occasions, with my reasons for this belief (Harris, 1926, 1937, 1940).

In the case of this little child, otherwise very healthy and not in the least degree of neurotic type, the acute onset of the neuralgia with commencement of her teething is most suggestive evidence of the close connexion between dental disturbances and the origin of trigeminal tic.

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THE AVAILABILITY OF THE CALCIUM OF MILK

BY

KATHARINE H. COWARD, D.Sc.Lond.

ELSIE W. KASSNER, F.I.C.

AND

LETITIA W. WALLER

(From the College of the Pharmaceutical Society, London)

The experiment reported here was carried out in response to criticism of our experiments published in this *Journal* (Coward, Kassner, and Waller, 1938). In the early experiments we had shown that rats fed on a diet resembling that of a poorer-class population and supplemented by liberal doses of cod-liver oil failed to produce normal calcification of the bones, but that the calcification was improved in proportion to the supplementary doses of a mixture of calcium and phosphate salts given. In fact, the highest dose of salt mixture produced as high a percentage of ash as did a supply of milk *ad lib.* each day. It was not, however, from a comparison of results of these apparently excessive doses that we drew our conclusion of the relative availability of calcium from milk and from salts, but from the result of giving only 5 ml. of milk to one of the groups of rats. Unfortunately we had not determined the calcium content of the milk given, for this comparison was not the purpose of the experiment. Judging by the percentage of ash found in the bones, however, the milk apparently contained only 0.76 g. of calcium per litre. Since the average calcium content of cow's milk is 1.12 g. per litre, we thought it very unlikely that the sample we used could