DIFFERENTIAL DORSAL ROOT SECTION IN THE TREATMENT OF BILATERAL TRIGEMINAL NEURALGIA

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Bilateral trigeminal neuralgia occurring with, or appearing after, unilateral trigeminal neuralgia is a formidable disability presenting to the surgeon a problem calling for a high degree of judgement and skill. The possible consequences of bilateral loss of sensation and the inherent threat of bilateral damage to the motor innervation of the muscles of mastication have made surgeons reluctant to operate. While reports of thousands of unilateral trigeminal operations appear in the literature, detailed reports of bilateral operations and their end results are extremely rare, yet the incidence of bilateral trigeminal neuralgia is approximately five per cent. While a number of references are made to bilateral trigeminal neuralgia, only one detailed operative report of transtemporal bilateral dorsal root section exists.

Cushing, in a series of 332 cases, discussed one patient with bilateral pain following herpes zoster, which, of course, is not true trigeminal neuralgia. However, in a footnote he alluded to another patient in whom there were definite bilateral symptoms at the time of operation, but no indication was given that the patient had been operated upon for bilateral pain.

Frazier and Russell, in an analysis of the symptoms and distribution of the pain in 754 cases of trigeminal neuralgia, made no mention of bilateral neuralgia.

Dandy reported he had seen 3 patients with bilateral trigeminal neuralgia. One of them was seen before Dandy had developed the posterior approach to the trigeminal dorsal root and consequently he did not operate. The other 2 patients he operated upon successfully, cutting both dorsal roots simultaneously in the posterior fossa. Later he made the simple statement, "twenty operations were satisfactorily done."

Horrax and Poppen, reporting on 176 patients operated upon in a series of 468 patients with major trigeminal neuralgia, found 19 or 4.1 per cent having bilateral pain. However, no indication was given that any of the patients with bilateral pain were operated upon, nor was any reference made to the type of treatment rendered.

Grant, presumably including Frazier's statistics, reported on 925 patients with trigeminal neuralgia, and indicated that in 17 patients pain occurred on the opposite side after having been relieved on the side on which

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the pain originated. Five of these were relieved by bilateral operation, but no details of the distribution of the pain, or of the operative end results were given. Two received bilateral alcohol injection of the trigeminal branches involved, 10 were operated on on the side where the pain originated and when the pain re-appeared on the opposite side, it was checked by alcohol block. An average of 4 years and 4 months elapsed between relief of pain upon one side and its onset upon the other, the shortest period being 9 months, and the longest 12 years.

Coleman, Meredith and Troland,² in a series of 600 patients with major trigeminal neuralgia on whom operation was performed on one side, reported one instance of bilateral dorsal root section without details of the operation. In fact they made the statement that one of the distinguishing features of true trigeminal neuralgia is that the pain is unilateral, a feature differentiating it from atypical neuralgia and psychogenic facial pain.

Davis and Naffziger⁷ reported on 245 patients, 9 or 3.6 per cent of whom had bilateral involvement. Of the total number, 179 were operated upon but no statement was made as to treatment rendered those with bilateral pain.

Peet* and Schneider,²⁴ reporting on 689 cases, found 2.7 per cent of patients with bilateral trigeminal pain, in whom the pain was present on both sides when first seen, and 5.9 per cent in whom pain appeared on the opposite side some years later. No statement was made as to the number operated upon for bilateral pain, nor were any details given as to the postoperative results of bilateral dorsal root section. However, one gathers from their paper that patients with bilateral trigeminal pain had been operated upon.

Olivecrona²² indicated that he had had 2 instances of bilateral trigeminal neuralgia among 60 radical operations for trigeminal neuralgia. On 1 of these patients, another surgeon had previously performed operation, cutting the right dorsal root with loss of the motor fibers. When pain appeared in the left 2nd division, the surgeon did an intracranial section of the left 2nd division. Twelve years after the first operation, and 2 years after the operation on the left 2nd division, pain returned on the opposite side. Olivecrona then cut the left dorsal root in the posterior fossa with complete relief of pain. The second patient did not come to operation. However, Olivecrona indicated that had the second patient come to operation he would have cut the dorsal root via the posterior approach because of the presumed preservation of tactile sensation by this route and the ease with which the trigeminal motor root may be saved.

A summary of the various series referred to above is given in Table 1.

Frazier's¹⁰ report of a patient with bilateral major trigeminal neuralgia operated upon by the transtemporal approach is worthy of review. It was the first bilateral operation in his series of 432 radical operations. The patient was a woman 51 years of age, who had been operated upon for major

* Peet stated he had done dorsal root section three times for bilateral trigeminal neuralgia without comment concerning the end results.