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NEUROLOGICAL COMPLICATIONS OF THE THIRD MOLAR TOOTH

By

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IN the course of an investigation* into the complications of eruption of the wisdom teeth I have collected some 700 cases from the literature and from private sources. In a number of these cases the symptoms were neurological rather than dental, and in some of them the patients had been treated by neurological methods for considerable periods of time without benefit, only to be relieved immediately as soon as the real cause was discovered. It seems to me, therefore, worth while to put some of these cases on record in the hope that similar errors in diagnosis may be averted in the future.

NEURALGIA

Neuralgic pain is such a common association of dental disease that it is unnecessary to stress the possibility that an unexplained neuralgia may have its origin in a tooth. Of the very many cases of neuralgia in my records I only wish to describe in detail those where the condition strongly resembled or was even mistaken for tic douloureux. Macphee¹ records two cases. A female of 55 had had intermittent neuralgia for 35 years and was completely cured of it on extraction of a buried and impacted horizontal right lower wisdom tooth, which was carious. A lad of 17 was treated for nearly a year with large doses of quinine for a severe neuralgia without obvious dental cause. X-rays showed that both his lower wisdom teeth were deeply impacted and pointing backwards, and their extraction gave complete relief. André² reported the case of a woman of 40 who suffered from painful facial neuralgia accompanied by oedema and ear discharge. The Gasserian operation was being considered, as an injection of camphorated alcohol had given only temporary relief. X-rays, however, showed the real cause :

* The preparation of my Arris and Gale (1934) and Hunterian (1935) Lectures (Royal College of Surgeons of England).

an upper wisdom, which was forcing itself between the roots of the tooth in front. Buchanan³ records another case of intense neuralgia resembling tic douloureux where all kinds of treatment had been tried and failed, so that the patient had given up hope and decided to become a drug addict. Two impacted upper wisdoms were removed and within three weeks all the symptoms had gone. Jarzab's patient,⁴ a woman of 28, was diagnosed as a case of trigeminal neuralgia, and the cause of the pain was a supernumerary or fourth molar which had been completely concealed by the imperfectly developed third molar in the first X-rays which were taken. She was completely cured by its extraction. This case resembles one contributed to me by Mr. Dawson Buckley (Nice), whose female patient suffered from severe neuralgia, with loss of sleep and migraine. All the teeth were present,

FIG. 1

including the wisdom teeth, and in good order. A dental radiograph, however, revealed a small buried supernumerary denticle absorbing its way into the side of the root of the upper wisdom tooth on the affected side (fig. 1). The pain was due to pulpal irritation of the eroded wisdom tooth and was entirely mitigated when this tooth and the denticle were removed.

Other anomalies besides the presence of a supernumerary are apt to give rise to grave neuralgic pain. Morel⁵ records a case where the roots of the second and third molars were fused and the patient suffered from terrible neuralgia and was threatening suicide.

Dr. Galway Murray had a female patient aged 47 who had suffered for nearly five years from acute spasmodic attacks of pain on the left side of the face, left upper eyelid and forehead. The least touch in this region would produce exquisite pain. The pain had recently extended to the upper lip. She had no visible upper teeth, but X-ray examination revealed a buried

third molar in the left upper jaw, and when that was removed she suffered no more, and has remained well for ten years. Mr. E. D. D. Davis sent me notes of a female aged 22 who had been treated for some time as a case of severe trigeminal neuralgia along the course of the right auriculotemporal nerve. A right lower wisdom tooth was discovered impacted and the pain ceased completely when the tooth was removed.

Dr. H. E. Harris (Bristol) wrote to me of a man of 45 who suffered from severe incessant neuralgia in his right cheek. An alcohol injection was ineffective and later a portion of the inferior dental nerve was removed. The pain, however, persisted, and his life for four years was absolutely miserable. Eventually the late Sir Victor Horsley removed his Gasserian ganglion and cured him. About 15 years later, when dental radiography became more common, an impacted wisdom tooth was found. Dr. Harris thinks that this may have been the cause of his trouble. Dr. E. Miles Atkinson (Bath) reports the case of a female of middle age who had severe trigeminal neuralgia of the first and second division and had had varied treatment, including alcohol injections. She was referred to him for ear, nose and throat investigations, which proved negative, but two impacted wisdoms had already been discovered. When these were removed her attacks of pain ceased. Mr. R. V. Bradlaw's patient, a female of 30, suffered severe occipital pain radiating down the neck for nine months. There were no intermissions, though the intensity of the pain varied. She had attacks of blurred vision and giddiness. Her doctor had diagnosed migrainous neuralgia and prescribed luminal. The sinuses were investigated, but were normal. The right lower second molar tooth was found to be tender to percussion, and a probe introduced on its distal aspect came into contact with an impacted wisdom tooth. After the removal of this tooth the patient had no pain of any kind.

Mr. Padgett sent me the story of a young medical man who was anxious to join the R.A.M.C. during the War, but had been rejected on account of frequent and violent attacks of trigeminal neuralgia which entirely incapacitated him. He had consulted eminent surgeons and had had his frontal sinus opened up and two operations on the Gasserian ganglion. Only when this proved futile was an X-ray taken, which revealed a horizontal left lower wisdom tooth with fused roots. With some difficulty the tooth was removed under gas and a complete cure resulted. Within three months he was happily at work in the army. Mr. Padgett remarks 'How astonishing to delay taking that X-ray picture! The life of this young doctor had been made a perfect misery to him and he was in that highly neurotic and depressed condition which might easily have led to suicide.'

PRESSURE ON THE SECOND MOLAR

Severe pain may be caused by pressure of a badly placed wisdom tooth on the tooth in front. A curious example of this was sent to me by Mr. E. S. W. Little (Newport) where the wisdom tooth was erupting immediately

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beneath the already erupted second molar and causing pressure erosion of its pulp. The arrangement of the two teeth was like that of a permanent tooth erupting below a temporary one. A similar case has been recorded by A. T. Pitts.⁶ More commonly, however, the wisdom tooth is placed horizontally or obliquely and presses into the neck of the second molar, destroying its dentine and sometimes eroding its pulp. Mr. L. Trethewey (Plymouth), Mr. F. C. Blaaberg, Mr. H. L. J. T. Hardwick and Mr. G. T. Harborow (London) sent me examples of this, and so also did Mr. J. N. Hine (Jersey), but in the latter case there was a further complication in that the second molar itself was impacted against the first. The patient, a doctor's wife, had suffered severe attacks of neuralgia for fourteen years, sometimes suffering from sickness as well. The root of the second molar was largely absorbed by the pressure of the third. A case (fig. 2) sent to me by Mr. D. E.

FIG. 2

Robinson (Blaenavon), was that of a young man of 30, who had neuralgic pains on the right side of the face as a result of one of these horizontal impactions.

HEADACHE

Headache is a symptom which is less obviously associated with dental causes than facial neuralgia, and it is therefore of interest to note that this symptom appeared in no less than 55 of my 700 cases. L. R. Main⁷ has drawn attention to the importance of considering all cases of headache seriously from the dental point of view. He thinks that a dental reflex pain is generally found in the occipital region, though it may occasionally be in the parietal region. He suggests that the occipital headache may be due to the anastomosis between the great occipital nerve and the fifth cranial nerve. He also cites cases where the pain was supraorbital: for example, a female had severe frontal neuralgia with tick-like noises in her left ear. After a year an X-ray revealed fusion of her second and third molars. Another case of Main's was that of a clergyman of 36 who had serious thoughts of

giving up the ministry on account of his severe headaches. He had been investigated at a famous medical centre and no cause had been found. His headaches were, however, completely cured by the removal of his impacted lower molars. The same teeth were apparently the cause of headache, gastralgia and dysmenorrhœa in a woman student of 20, for the symptoms all disappeared when the teeth were extracted. T. A. Buckley⁸ records the case of a woman patient of 27, who had had more or less continuous and severe temporal and frontal headache for ten years with occasional vomiting. For two years she had been taking codein and 50 grains of aspirin a day. She was most carefully investigated, and the urinary and gastrointestinal systems were excluded. A brain tumour was suspected, but the radiologist who X-rayed her skull to confirm this diagnosis drew attention to a fully developed tooth just below the coronoid process of the mandible. The day

FIG. 3

FIG. 4

after the removal of this tooth she was free from headache for the first time in several years and thereafter headaches were only occasional.

The following cases have been sent to me privately. An officer aged 22 complained at first of vague headaches which later became more severe, and sleep was disturbed. He had discomfort in his mouth and trismus. When the impacted lower wisdoms (fig. 3) were removed his pain ceased (Major S. H. Woods, Army Dental Corps).

A woman of 28 had suffered for some years from severe headache, accompanied by sickness and absolute prostration. The attacks came almost every week and wrecked her social life and relaxations. Her doctor was unable to find any cause, but eventually radiographs of the jaws were taken and four impacted wisdom teeth were revealed (fig. 4). The second molars were extracted to make room, and with this relief of pressure the distressing symptoms 'abated to a degree sufficient to indicate that the impacted wisdoms were in part if not wholly responsible' (Mr. A. A. Clark). Another case was that of a female of 23, who had had frequent attacks of

bad headache, often ending with severe vomiting, for three or four years. Eventually the pain began to localise in the wisdom tooth area and the X-ray then showed that this tooth was impacted. After its removal there were no further attacks (Dr. O. Bjerrum, Denmark).

A male of 21 suffered from headaches, inability to concentrate, irritability and failure to perform the most simple daily tasks required of him as an electrical engineer. Two lower wisdom teeth were found to be buried and their extraction restored him to full health and mental vigour (Mr. K. W. Whitworth, Coventry).

Dr. E. Miles Atkinson wrote to me of a case of supraorbital neuralgia in a man of 22, relief being obtained from the extraction of a buried lower wisdom tooth on the same side.

A man of 25 suffered severe pain on both sides of the head, and was diagnosed and treated as migraine, without any benefit. Both lower wisdoms

Right

FIG. 5

Left

were buried and obliquely placed and the pain did not return after their extraction (Dr. C. F. L. Nord, Holland).

A patient of my own was a man of 50 who had incapacitating neuralgia of several years' duration in the left parietal region. His lower wisdoms were both buried and horizontal, with the nerve canal dipping to run underneath them. On the left side the radiograph (fig. 5) shows the canal to be somewhat constricted. The second molar had already been extracted without alleviation of the symptoms, but they disappeared immediately upon removal of the third molar.

A girl of 18, a doctor's daughter, had suffered with typical migraine since the age of 12, the attacks coming on about every fortnight and keeping her in bed for 24 to 48 hours. She complained of being always tired, and also of attacks of pain over the sacroiliac joints which prevented her from standing for more than a quarter of an hour. She had unerupted wisdom teeth, and when these and her crowded second premolars were extracted all her symptoms ceased, including the migraine (Dr. C. W. Kay, Lymington). Another case of Dr. Kay's was that of a man of 22 who had

severe occipital neuralgia with attacks of momentary loss of consciousness. He had bad pyorrhœa and all his teeth were removed. If anything, however, his symptoms became worse rather than better. His teeth had not been X-rayed, and when this was done impacted molars on both sides were revealed. Their extraction cured him completely.

Two cases of severe postoccipital neuralgia were sent to me by Major S. H. Woods. In the first case the lower wisdoms were buried and obliquely pressing against the second molars. The second patient, a man of 35, was taking increasing quantities of aspirin for relief; there was a small right lower wisdom pointing backwards. Both were cured by extraction. Drs. T. H. Bishop and S. D. McClean sent me notes from Persia of a robust man of 33 who complained of pain behind the eyeballs, at the back of the head and in the lumbar region. A thorough physical examination revealed no cause for his condition. Both his antra were punctured and irrigated without relief. He had a complete upper dental plate. When stereoscopic X-rays of the skull were taken an unerupted left upper wisdom tooth was found. The symptoms disappeared after its removal. Its crown was bathed in dark, blood-stained pus.

A less common distribution of pain was recorded by Giorelli.⁹ The patient complained of neuralgia of the tongue, beginning spontaneously or else excited by contact with the teeth. He was a man of 56 years of age, and X-rays showed a buried right lower wisdom tooth. His recovery was complete when this was removed.

Lebourg¹⁰ reports a case of lingual neuralgia complicating the extraction of a right lower wisdom tooth which had an apical infection causing a bony abscess. The day after the operation, and for six months after, the patient suffered from pains and an incessant sensation of prickling in the front right half of the tongue. No lesion could be found and the pain was not relieved by mouth washes. Lebourg offers no explanation beyond saying that the trouble was inflammatory and not reflex.

PAIN REFERRED TO ARM AND SHOULDER

In a case reported by Scheiwe¹¹ a man of 30 had severe pains in the left side of the neck for over ten years before the pain finally settled in his lower molars and stimulated his advisers to take an X-ray. The distal root of the lower left first molar was found to be extremely eroded, and both it and the second molar were tilted, with a follicular cyst between them at the bottom of which lay the wisdom tooth. Grammel¹² had a patient who suffered from weakness and neuralgia of the left arm, which ceased at once when a horizontally impacted left lower wisdom tooth, pressing on the second molar, was extracted. A woman of 26 (case recorded by Tellier and Beyssac¹³) had been in ill-health for three years, and suffered from rheumatic pains in the left shoulder and arm for about six months. All the muscles in this part of the neck and shoulder were painful and tender. Then a swelling appeared in

the mouth behind the second molar tooth. It remained for a month, and tension in it became acute for two days with a recrudescence of the neck and shoulder pains. The patient recovered within a week of removal of a badly placed wisdom tooth, and there was no recurrence in three years. Another of their patients—a woman of 47—had been unable to work for two months as a result of ‘paralysis’ of the arm, and torticollis. She was completely cured a fortnight after the extraction of an impacted lower wisdom tooth. Yet another, a woman of 32, had torticollis and pain in the left shoulder after extraction of a septic third molar, but recovered in 17 days.

Mueller¹⁴ records a curious case where a doctor’s daughter aged 15 developed weakness of the legs with occasional impairment of vision. By the time she was 17 she could only walk with assistance and could not see at all except when she was sitting up, and then could only distinguish large objects. There was evidence that her partially erupted wisdom teeth were pressing severely on the second molars. The latter were extracted and she showed improvement within a week. At the end of three months she was perfectly well except that the vision in her right eye appeared to be lost permanently. Dr. C. W. Kay sent me notes of a lady of 27 who had complained of various symptoms for about five years, including pains in both ears and in the throat, and neuritis of both arms from the fingers to the elbow. The patient became neurasthenic and suffered from lassitude and anæmia with some loss of weight. A throat specialist had ascribed all her troubles to her tonsils, which had been removed, without benefit. A radiograph of her teeth was taken on the off-chance that there might be something there, and an impacted lower right wisdom was shown; its roots were in intimate relationship with the inferior dental canal. After the extraction of the molar she lost the neuritis and other pains, gained in weight and felt much better. Another case of brachial neuritis was that of a captain in the Navy, sent me from Malta by Surg. Lt.-Comdr. Eglington. His mouth was searched for a possible focus of infection and a deep sinus was found behind the second left lower molar. X-rays showed that a portion of root had been left behind when the wisdom tooth had been taken out a little while before, having apparently been vertically impacted. The neuritis cleared up when the fragment was removed, but recurred some months later after the incomplete extraction of the lower left wisdom, the roots of which had been left impacted. The neuritis was finally relieved when this was attended to.

There appeared to be no infection in a case sent me by Mr. A. H. Adcock (Birmingham), that of a woman who had a horizontally impacted right wisdom tooth, and who suffered so severely from neuritis that she was unable to lift her right arm. For two years she had had indefinite pains in the side of the neck ‘as though I had been sitting in a draught.’ The wisdom tooth and the tooth in front of it were removed, and the patient complained of the typical pain in her arm when the socket was syringed. Another female patient had suffered from incapacitating headaches for over six years, and

was finally seen by Dr. R. R. Macintosh (London). She had had chronic pains in her right shoulder, and an impacted wisdom tooth had been removed but sepsis had developed in the socket. When the syringe was inserted to irrigate the socket, the patient cried out in agony because of the pain in her head, similar to that which had incapacitated her on and off for years. She had never connected the headaches with the tooth, but she did not suffer from them again after the extraction.

Mr. J. F. Gow (London) sent me notes and skiagrams (fig. 6) of a female patient of 22 who had severe sciatica which 'cleared up wonderfully' after

FIG. 6

the extraction of a horizontal wisdom tooth which had completely eroded the roots of the tooth in front.

PARALYSIS AND SPASMS

Rouveix¹⁵ reports the case of a man of 36 who suffered from complete trismus and painful left facial spasm, accentuated by violent, rapid and sudden contractions like those of tic douloureux. There were also some spasms in the left leg and a temperature of 40° C. The patient was diagnosed and treated for delayed tetanus, but ultimately a dentist was consulted and a painful spot found at the level of the roots of the left upper wisdom tooth, which was in a normal position and appeared healthy. The tooth was extracted and recovery followed.

A case of facial paralysis due to an impacted left lower wisdom tooth in a boy of 18 is reported by Marco.¹⁶ The family doctor had diagnosed the condition as congenital, but there was a complete disappearance of the symptoms after the tooth had been removed. Moreover, the boy, who had previously been small and anæmic, gained in weight and height after the operation. Bercher and Houpert¹⁷ had a female of 42 who suffered from neuralgia and complete facial paralysis. The pain ceased as soon as roots from the fractured left lower wisdom tooth were removed, but the paralysis did not completely disappear.

Hemiparalysis of the soft palate is an unusual complication; a case resulting from a carious right lower wisdom tooth is recorded by Kritchewsky.¹⁸ After the removal of this tooth the palate regained its normal colour, appearance and reflex activity. The author thinks that the cause was

FIG. 7

probably reflex irritation. An exceptional case, referred to me by Dr. W. H. Coldwell, was that of a young woman with a buried and impacted mandibular third molar who experienced a sharp stab of neuralgic pain, sufficient to make her cry out, and thereafter the side of the jaw and the area of the lip and chin supplied by the mental branch of the third division became numbed. The symptoms resembled the anæsthesia produced by a block novocain injection at the mandibular foramen. I removed the buried molar (fig. 7) under intratracheal gas-oxygen anæsthesia (Dr. I. W. Magill) and sensation, after passing through a stage of tingling, became normal within a week.

EPILEPSY AND OTHER NERVOUS PHENOMENA

Two cases of vertigo caused by impacted third molars are recorded by Anderson.¹⁹ One was that of a woman of 21; and the other that of a man

FIG. 8

of 45, and in both cases the vertigo disappeared when the impacted teeth were removed. In both cases there was some evidence of infection. I myself had a male patient of 53 who suffered from head nystagmus which was immediately relieved when a buried and impacted right lower third molar,

lying close to the mandibular nerve, was removed (fig. 8). There was caries of the crown and sclerosis of the surrounding bone.

Epilepsy has been recorded by a number of writers, e.g. Tracy,²⁰ McGauley,²¹ Lorient²² and Lucas.²³ McGauley's case was that of a lad of 15 who had fits for two years; there was no family history of epilepsy. The attacks began with a trembling of the jaws and a dull pain in the left side of the face; the fits ceased on extraction of two impacted and imperfectly developed lower wisdom teeth. No further fits occurred during two years' observation. Lucas's patient, a girl of 17, had had no less than six cerebral decompressions, each of which had seemed to relieve her fits for a short time. Finally, however, four impacted wisdom teeth were found and removed, after which she had three very slight seizures within a week and after that (eight months before this report was made) was entirely free from them and able to live a normal life. A similar case is recorded by Carrea and Samenfo²⁴ where a female patient of 35 suffered from fits two to three times a week. All four buried wisdom teeth were revealed by X-rays, and the patient was entirely free from fits five years after their extraction. The teeth were removed one by one and the last fit occurred at the time of the third extraction. Mr. D. W. Earle (New Zealand) has sent me X-rays of a case reported by him²⁵ of a man of 23 who two years before had been passed fit for the police, but a year previously had started having epileptic fits which occurred about once a week for eleven months. All kinds of treatment had been tried, and he had been discharged from two hospitals as hopeless. His teeth were perfect except for a little caries on one lower molar, and also the absence of a lower left wisdom. X-rays showed the missing tooth badly impacted and pressing on the molar in front, which it had eroded. A few days after the extraction he had two slight fits, but thereafter was entirely free from them. Dr. Hildred Carlill²⁶ recorded the case of an epileptic woman of 32 who had five severe attacks in eight months. The two lower wisdoms and the left upper one were removed and without any other treatment the epilepsy was cured. In a case of Mr. R. V. Bradlaw's a married woman of 37 had had epileptic fits for ten years and complained of pains radiating down the right side of the jaw, and up into the ear. Nothing seemed to relieve this pain, which quite incapacitated the patient because it 'made her feel so ill.' X-rays showed a right lower third molar horizontally impacted, and the three lower molars on that side were extracted; since then she has had no more pain and the epileptiform attacks have been less severe.

HERPES AND SKIN ERUPTIONS

Mr. K. McAllister (Leicester) sent me notes of a woman of 25 with a patch of persistent herpes below the angle of the mouth on the right side. She sought dental aid because of severe inferior dental neuralgia on the same side. A buried wisdom tooth was removed, which relieved her of the neuralgia, and ten days later the herpes had cleared. Dr. Helen Boyle recalled

for me a case of recurrent herpes on the cheek which completely disappeared on the removal of an impacted molar on the same side. Dr. H. C. Semon and Mr. Keith Keele supplied me with the notes and X-ray films of a surgeon's daughter aged 30 who was similarly afflicted. Dr. Semon writes in his summary : ' Clear evidence of three attacks of herpes facialis ' between July 1931 and extraction of her wisdom tooth in the autumn of 1932 (fig. 9). The patient's X-rays showed only one wisdom tooth, the lower right, which was vertically placed but only partially erupted. The tooth had a long tapering root, grooved where it lay in contact with the mandibular canal. When last seen, January 1934, the patient had remained entirely free from symptoms. Major S. H. Woods supplied radiographs and notes of the case of an officer who experienced a sudden attack of herpetic neuralgia on the right side of

FIG. 9

the face. There was swelling of the right cheek with pyrexia, and herpetic eruption starting near the right ear and spreading to the chin. The herpes became intractable. The neuralgia was located to the second division of the trigeminus. An upper wisdom tooth buried high above the roots of the second molar was found by X-ray. The second molar, the buccal roots of which showed pressure absorption, was extracted, and the patient became free of both affections, the herpes beginning to subside in three days.

Herpes, as a postoperative complication following removal of an impacted third molar, was kindly reported to me by Mr. J. Edgley Curnock. The patient, a woman, complained of severe pain on the left side of the face and the tilted but partially erupted lower wisdom tooth on the same side was accordingly removed under nitrous oxide. The pain became more severe, and on the second day a typical vesicular eruption appeared from the temple to the chin with extensions to the inside of the auditory meatus and within

the vestibulum of the mouth (fig. 10). The patient's temperature rose to 102° and the illness ran the usual course of an attack of herpes.

These cases show an analogy with that of the daughter, aged $7\frac{1}{2}$, of a medical colleague. This child has suffered regularly from a patch of herpes

FIG. 10

on the chin every time she has been cutting either a deciduous or a permanent molar tooth. The patches last for about a fortnight and disappear when the tooth in question comes through. Less obvious are the subepidermal rashes which young men and women towards 20 often exhibit. The area of distribu-

FIG. 11

tion is over the part of the chin supplied by the mental branch (fig. 11), and is almost perpetual during the eruptive activity of the wisdom tooth.

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