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CROTON OIL IN DELIRIUM TREMENS.

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This peculiar disease, although easily recognised, is not so easily treated, for we find practitioners using a great variety of medicines, which are very opposite in their effects; and if we consult authorities, such difference of opinion occurs, as to leave the medical attendant very undecided what course to pursue, so that he is still left to his own judgment as to the best selection of remedies. To procure sleep, and thus prevent the continuance of the delirium, is the great object to be attained, and opium would at first appear the remedy most appropriate to fulfil this indication. My experience, however, leads me to a different conclusion, although it is true my means of observation have been very limited, cases of this character rarely occurring in agricultural districts, in comparison with large towns; yet as far as they extend I find that opium has entirely failed; or where sleep has been induced, the patient has awakened with many of the symptoms aggravated. In the *Dublin Journal of Medical Science*, January, 1841, Dr. Ware, of Boston, United States, published a statistical account of sixty-nine cases of delirium tremens; of *eight* patients who were treated by large doses of opium, *four* died; of seven treated by small doses, *two* died; thus giving six deaths out of fifteen cases, in which opium was the principal remedy employed; whilst in the remaining fifty-four, in which opium was not used, or only incidentally in small quantities, only *five* died. This difference in the results of treatment Dr. Ware considers too great to be attributed to accident, and to go far to establish the truth of the opinion that opium, in large doses, is actually injurious to patients labouring under delirium tremens. The acknowledged benefit derived from the administration of croton oil in certain nervous diseases, attended by a high degree of excitement, such as hysteria, epilepsy, neuralgia, &c., combined with the failure of opium in those cases of delirium tremens which have fallen under my care, first induced me to give this medicine a trial in this formidable disease, and the success I have experienced has been such as to lead me to publish the result, the more especially as although I have frequently met with complaints of the insufficiency of the usual mode of treatment, I do not remember to have seen any detailed account of cases in which this remedy has been employed.

Of the five following cases, I relied in the two first, entirely upon opium, and they died; in the third and fourth, opium was again administered, but failing, the croton oil was resorted to with perfect success. The last

was treated at once with croton oil, as I had every confidence in the remedy, and from the patient having a fractured leg, it was necessary that he should be immediately tranquillized.

CASE I.

December 21st. John Beck, aged 52, boatman, after exposure to inclement weather, was first seen this day, and found to have diffuse swelling of the leg, accompanied with slight head-ache, and fever. He is stout and robust, of a sallow complexion, and bloated appearance, being a man of intemperate habits, and latterly has been drinking more freely than usual of malt liquor and cider.

Ordered.—Pulv. Jalapæ Co., dr. j.; statim. sumend. Capsulæ Papav. iij.; Flor. Anthemid, oz. j., pro fœtu cruri.

22nd. Has passed a restless night; is uneasy and trembling; bowels moved freely; leg better; head relieved, and skin moist; but he is incessantly talking. I ordered him to be kept quiet, plenty of light nourishment to be given, and an anodyne at bed-time.

23rd. Has been delirious throughout the night; is constantly talking, and very suspicious; eyes suffused; face flushed; is in continual motion; skin clammy and moist; pulse quick and weak. I ordered the nourishment to be continued, with his usual stimulus, and gave him the following mixture.

R. Morphiæ Mur., gr. viij.; Acid. Muriat., m. xii.; Aquæ Puræ, ozs. iss. M. Capt. cochl. min. j. secundis horis ex aquâ.

Vespere. Has become very violent, and is restrained with difficulty. The medicine, although regularly taken, having produced no perceptible effect, I ordered in addition a pill containing Pulv. Opii., gr. j.; Calomel., gr. ij.; to be taken with each dose of the drops.

24th. Has had no sleep; extremities becoming cold; pulse thready and weaker; altogether worse, and appears sinking.

R. Ammon. Sesquicarb., gr. x.; secundis horis sumend. He sank a few hours after; no examination of the body allowed.

This patient took six grains of morphia, and five grains of opium, equal in all to seventeen grains of opium, (allowing one grain of morphia to be equal to two grains of opium,) in less than twenty-four hours, without procuring sleep.

CASE II.

Mr. W., aged 36, coachmaker, pale sallow complexion, melancholic temperament, constitution much shattered by several severe attacks of hæmatemesis and the habit of indulging largely in the use of

spirituous liquors. For a short period previous to the present, he had become suddenly much more temperate, and this, combined with the generally embarrassed state of his affairs, had produced considerable depression of spirits. For a day or two before the nature of this attack became apparent, his stomach and bowels had been disordered, and his family observed an alteration in his behaviour, and a strangeness of manner, which increased so much that they applied for medical aid.

I first saw him on the 29th of March. The want of sleep, the absence of fever, and yet the high nervous excitement, the suspicious apprehensions, the tremulous motion of the hands and lips, moist tongue, the partial nature of the delirium, with other prominent characteristics of delirium tremens, left no doubt as to the disease. I ordered the house to be kept perfectly quiet, and determined to commence with small doses of a sedative, quickly repeated. I gave him three quarters of a grain of muriate of morphia in solution every hour.

Meridie. Has taken four doses of the morphia without any sleep. R. Pulv. Ipec. Co., gr. x., altera quaque hora.

Vespere. The pulse being weak, frequent, and small, and the excitement rather increased, I applied a blister to the nape of the neck, and combined a stimulant with the narcotic. R. Spt. Ammon. Co., Spt. Lavend. Co. utrque, dr. iij.; Confect. Aromat., dr. j.; Tr. Opii, dr. iss.; Mist. Camph., oz. iv. M. Capiat partem tertiam quarta quaque hora.

30th. *Mane.* Has passed a restless night, and is much exhausted; thirst, contracted pupil, partial suppression of the secretions, with other of the usual effects of opium were present. To relieve the exhausted state of the system, I gave him ten grains of camphor every four hours, and a tablespoonful of gin, (the stimulant he was most accustomed to,) beaten up with an egg, or some arrowroot, as often as the patient felt inclined to take it.

Vespere. Is much the same; has vomited several times; nervous excitement undiminished. He will answer a direct question, but immediately after relapses into a rambling state. I now determined to give larger doses of opium, and to increase until sleep was procured.

R. Pulv. Opii., gr. xii.; Pulv. Rhei., gr. xviii.; Extr. Stramon., gr. vj. M. Fiat pilul. xij. Capiat iij. statim, et repet. omni quarta hora. Adde pilul. unam sing. dos. si opus sit.

March 31st. *Mane.* Has slept three hours, and is on the whole quieter, although still restless. Has taken twelve grains of opium during the night. To continue the opiate pills, but less frequently.

Vespere. During the day has been alternately drowsy and excited, has taken more nourishment than before. I ordered four pills every four hours, with three tablespoonfuls of the following mixture:—Muri. Morphia, gr. iij.; Syrup. Rhæados., dr. ij.; Aquæ Puræ, oz. vj.

April 1st. *Mane.* Fully under the influence of the narcotic, having slept the greater part of the night; has a wildness of appearance if roused, with spasmodic action of the muscles.

Meridie. Mr. Larcombe met me in consultation, and considered the patient proceeding favourably,

the effect of the opium having partly gone off, and the excitement in a great measure subsided. The opium was continued gradually, lessening the dose.

Vespere. Still drowsy; tongue dry and brown. To persevere in the opiate by night, and as the bowels have not acted for four days, an aperient in the morning.

April 2nd. *Mane.* Being obliged to attend the assizes at Taunton, Mr. Harman, a neighbouring practitioner, saw him, and deemed him to be going on favourably, but the aperient not having acted, it was directed to be repeated in the middle of the day. The blister being still sore, Mr. H. thought the endermic system might be tried, and ordered an ointment to be applied, containing six grains of morphia, and half an ounce of ceratum cetacei.

Vespere. On my return home found the bowels had moved freely, but all the worst symptoms had returned with renewed violence. I immediately ordered the opiate pills and mixture to be given with gradually increased doses.

3rd. Has passed a very restless night; pulse very quick and weak; great exhaustion; subsultus tendinum; will not take nourishment. Ordered stimuli of various kinds, and the opium at intervals. He continued to get worse throughout the day, and sank about eight in the evening.

Post-mortem the following day in the presence of Messrs. Harman and Larcombe. Vessels on the surface of the brain much congested; arachnoid membrane opaque, and a considerable quantity of serum effused under it; ventricles contained a little serum; substance of brain firm and healthy. Head only examined.

This patient took fifty-seven grains of opium, and twelve grains of morphia, (equal to eighty-one grains of opium,) in six days, besides using the morphia endermically, with camphor, ammonia, and various stimuli.

CASE III.

Mr. E., farmer, aged 49, of sanguine temperament and full habit; has hitherto enjoyed good health; for a considerable time has been in the habit of partaking largely of gin and cider. He first applied on the 6th of October, complaining of languor, and general derangement of the stomach and bowels, accompanied by great mental depression. The usual remedies were employed, but on the 8th, symptoms of a decided attack of delirium tremens manifested themselves, which, as presenting no peculiar features, it is unnecessary minutely to detail.

October 8th and 9th. He took one drachm of Battley's solution, ten grains of opium, and one grain and a half of morphia, without much effect; and on the evening of the latter day, his friends being exceedingly anxious, requested Mr. Haviland, of Bridgewater, to meet me in consultation, who recommended calomel to be combined with the opium, and to prevent irritability of the stomach, to be accompanied with effervescing draughts of soda and sal volatile; also directed a cold lotion to be applied to the head.

10th. On the morning of this day he was found better, and the bowels having been confined several days, an aperient was ordered, discontinuing the opiates for a few hours. In the evening the bowels had been relieved, and as he was labouring under a variety of illusions, the opiate pills were ordered to

be continued, but at the interval of every *six* hours, with the effervescent stimulant draughts.

11th. The disease became worse; he was given the opium every *four* hours. In the evening the opium not appearing to be of any service, I determined to try the effects of the Indian hemp, and administered it in the following form:—

R. Tinct. Cannab. Indicæ, m. xxxvi; Syr. Rhæados, dr. j.; Aquæ Puræ, q. s. Fiat haust. secundis horis sumen. donec sopor superven.

After leaving him a few hours I was hastily summoned, as he was so violent as to require several persons to manage him. He would not take the medicine, and imagined the attendants were going to murder him, with other similar delusions. My presence seemed to quiet him, but he continued very talkative. I persuaded him to sit down, and wishing to try the effect of tartar emetic, I induced him to take it in gin-and-water, the only liquid he would swallow, to the extent of thirty grains in two hours, which produced slight vomiting, and some degree of quiet, for he lay down in another room for a short period, but constantly talking to himself incoherently. At the end of an hour he became more restless again, and I was rather undecided what to do, as he was becoming very difficult to manage; with some persuasion I induced him to take eight grains of opium at one dose, but as this seemed only to aggravate the symptoms, and his violence was very great, not having a straight waistcoat at hand, I sewed him up tightly in a sheet, and left him alone for several hours, allowing nothing but water to be given.

12th. At my next visit on the morning of the 12th, the excitement was undiminished; he had occasional sleep, but awoke after a short period to renewed delirium. When finding him becoming worse, I determined on giving the croton oil, and to continue it until some effect was produced.

R. Ol. Tiglii, m. viij.; Mucil. Acac., oz. j.; Syr. Rhæados, oz. ss.; Aquæ Puræ, oz. iv. M. Capiat cochl. larg. ij., omni hora.

He took a dose or two without producing any kind of effect. A messenger was sent to request Mr. Standert, of Taunton, to meet me in consultation, and during his absence I made him steadily pursue the mixture, and after taking eight doses, containing sixteen drops of the oil, he was very freely purged. The excitement gradually lessened, and he had refreshing sleep of several hours.

13th. Mr. Standert met me in consultation, but the patient was so much relieved that scarcely anything appeared necessary; he was perfectly himself, felt quiet, and expressed a desire for food, which he had not done for many days. He was ordered the following:—

R. Pulv. Ipecac. Co., scr. j.; Hydrarg. cum Creta, gr. viij.; Conserv. q. s. Fiant pil., viij.; capt., ij., quartis horis cum haust. sequent. R. Mist. Camph., oz. iss.; Magnes. Sulph., dr. ij.; Antim. Tart., $\frac{1}{2}$ gr. M. Fiat haust.

14th. Proceeding favourably; has slept well; takes food. To persevere in the same medicines.

15th. Continues well.

16th. The same.

20th. Ceased my attendance.

This patient took thirty-six grains of solid opium, one grain and a half of morphia, and a drachm of

Battley's solution, which may be considered altogether equal to forty-eight grains of opium in four days.

CASE IV.

Mr. E., the same individual as in case three, having a few months after the first attack, (July,) returned to his old habit of dram-drinking, had another attack of delirium tremens, similar in most respects to the former. Not being fully satisfied in my mind as to the effects of the croton oil, I commenced with opium as before, but determined to push it to its greatest length, and in the course of six days he took opium in various forms, equal in extent to one hundred and sixty-nine grains, but without producing any permanent benefit. Sleep he did occasionally for a short period, but it was always followed by delirium, restlessness, and incessant talking. On the seventh day, the symptoms being very violent, I commenced giving the Oleum Tiglii, in doses of one drop every half hour, administering several doses myself. He took eighteen drops in the course of eighteen hours, which had a most powerful effect on the bowels, ending in refreshing sleep, and relieving all the symptoms. He required only a little stomachic medicine afterwards.

CASE V.

March 5th. Mr. P., aged 50, whilst intoxicated fell, and fractured his right leg, at the lower third of the tibia. With much difficulty he was taken to bed, and the leg set in wooden splints. He has an ulcer on each side of the fracture, through which the bone threatens to protrude every moment from his restless movements. After he was a little quieted, spasm of the muscles of the leg became very violent, requiring several persons to steady the limb. I prescribed the following:—

R. Liqr. Opii Sed., dr. j.; Aquæ Puræ, oz. iv. M. Capt. partem tertiam omni hora. If the spasm not restrained to be informed.

6th. *Mane*. He has slept two or three hours; is quiet, his leg being in a much better position than could be expected from his restlessness; otherwise looking well. As he was a sad drunken fellow, and had been so for years, and the spasm still present, I ordered him broth and eggs, and the following:—

R. Liqr. Ammon. Acet., oz. j.; Spt. Æther. Nitr., dr. ij.; Liqr. Opii Sedat., m. xxx.; Aquæ Puræ, oz. iv. M. Capiat partem tertiam quartis horis.

Vespere. Very quiet and comfortable; leg easy; no spasm.

7th. *Mane*. Has slept several hours; is comfortable; bowels not opened yet. R. Olei. Ricini, dr. vj. statim sumend.

Vespere. Bowels moved two or three times; is easy, but talkative.

8th. *Mane*. Called early this morning; found he had not slept, but had been very wandering and talkative; wanted to get out of bed; is very trembling and suspicious of his attendants; pulse 120; tongue dry; leg out of position from his constant struggles to get out of bed. Ordered the following:—

R. Liqr. Ammon. Acet., oz. j.; Gutt. Nigr., m. xii.; Vin. Antim. Tartr., dr. iij.; Aquæ Puræ, oz. vj. M. Capiat cochl. larg. ij., omni hora; a combination of opium and tartar emetic being very highly recommended by Dr. Graves. In addition to the medicine to take ale and eggs.

4 p.m. More excitement; requires four men to hold him; is very talkative, but will be reasonable for a moment; determined to lose no time, but to have recourse to the croton oil.

R. Ol. Tiglii, m. viij.; Mucilag. Acac., oz. ss.; Syr. Rheados, oz. ss.; Aquæ Puræ, oz. iv. M. Capt. cochl. larg. j., omni quarta parte horæ. Took three doses, and refused any more. No cessation of excitement.

8 p.m. Gave him another dose of double strength; then waited an hour, and gave him another; has now taken full eight drops of the oil. Ordered the remedy to be continued every hour, and left.

9th. *Mane*. Took one dose of the mixture after I left, when the bowels moved briskly seven or eight times; he then fell asleep, and remained so for three hours; is now very reasonable and quiet; leg altered, and put in a good position; foot much swollen from the great disturbance. Ordered plenty of nourishment.

Vespere. Has slept several times, and would have continued, but was disturbed six or seven times by another dose of the croton oil, which the attendant gave by mistake. Ordered an egg beat up with a little milk, and the following:—

R. Tr. Catechu., Tr. Camph. Co., utriusq., oz. ss.; Mist. Cretæ, oz. iv. M. Capt. cochl. larg. ij. secundis horis.

10th. *Mane*. Has passed a very good night, sleeping well; bowels settled; pulse 80; tongue clean; leg was extended; foot still swollen.

Vespere. Many persons have visited him to-day; amongst them several relatives from a distance. Being fearful that their presence would be injurious, I ordered an anodyne to be given at bed-time if he could not sleep.

11th. Slept well without medicine; leg comfortable. ordered a pint of ale and a mutton chop.

12th. Has not slept; leg examined; ulcers healing. Two pints of half-and-half and meat.

13th. Slept well.

14th. One ulcer healed, the other looking well. Two pints of cider, and smoked two pipes.

19th. Leg united, and he is very comfortable.

April 16th. He is sitting up out of bed.

This patient took ten drops of croton oil in seven hours, and a few hours after two drops, making twelve drops in less than twenty hours. The relief was most decided.

Remarks. These cases will, I think, justify me in concluding that the administration of croton oil is attended with decided benefit in cases of delirium tremens,—a disease complicated generally with other affections, chiefly those of the liver and stomach, the depraved secretions of which might, in many instances, keep up the irritation. But to the removal of these I do not attribute the favourable result, but rather to the croton oil acting as a direct sedative to the nervous system. I considered it of minor importance how sleep was procured, so that it was of sufficient duration to produce a permanent effect on the disease, and the benefit occurring in the cases I have detailed has been so marked as henceforth to give me a decided preference for its administration. The quantity given in so short a time would appear almost incredible, but as I had often given a drop every quarter of an hour in

epilepsy to the extent of twelve or fourteen drops, I felt justified in continuing the remedy until the effect sought for occurred; and in no instance have I observed any bad effect follow its administration. It will be seen that opium had a fair trial. At one time I gave it in moderate doses, gradually increased; at another a full dose, followed by smaller at short intervals; at another continued large doses. I used the solid opium, and various preparations,—laudanum, black drop, Battley's solution, and morphia, and in neither of my cases did I observe any decided benefit; sleep was often procured, but never sufficiently to renovate the nervous system.

ON DISEASES OF THE EYE.

(Continued from page 181.)

DIAGNOSIS.

DIVISION J.—CLASS I.

Inflammation of the Eye—Ophthalmia.—Pain, redness, and constitutional disorder.

1.—Conjunctivitis. Inflammation of the conjunctiva.

The enlarged vessels shift their place with the motion of the eyeball and eyelids; they form a network, and have a bright scarlet colour. The disease commences at the circumference.

a Mild Conjunctivitis or Catarrhal Ophthalmia.

The eye at first feels stiff and dry, and smarts as if from dust; soon there is watering and increased redness. *Diagn.* The very slight pain and intolerance of light.

b Severe Conjunctivitis or Purulent Ophthalmia.

The conjunctiva is swollen and intensely red; its surface is villous, pulpy, or granular. The discharge is purulent and copious. The disease generally first attacks the lining of the lids.

α Purulent Ophthalmia in Infants.

Cause—cold or irritation of any kind in the eye. It generally comes on three or four days after birth, and lasts from seven to fourteen days.

β Purulent Ophthalmia in Adults.

Atmospheric and other causes may produce this disease, and it is propagated by contagion; and not by contact only, but also through the medium of the atmosphere.

γ Gonorrhœal Ophthalmia.

Purulent ophthalmia in some way connected with gonorrhœa. It is the most virulent and destructive inflammation of the eye, but fortunately its occurrence is rare.

ε Pustular Ophthalmia.

The distended vessels are in fasciculi, and terminate at the margin of the cornea, or a little over its boundary, in a small reddish or whitish elevation; at first vesicular, (phlyctenulae,*) but afterwards pustular. *Diagn.* The slight degree of pain and intolerance of light.

* Dim. of phlyctæna, φλυκταινα, a vesicle; from φλῆζω, to be full or hot.