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Contributors

Williams, Tom A. 1870-
Royal College of Surgeons of England

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FACIAL SPASM AND TIC; TORTICOLLIS—DIAGNOSIS AND TREATMENT.

By TOM A. WILLIAMS, M.B., C.M. (Edin.),
WASHINGTON, D. C.

THOUGH not dangerous to life, few affections are more troublesome to their victim than the facial grimaces and twistings of the neck comprised in the above titles. The patients are willing to take great pain to get rid of the unpleasant gestures, which though not painful in themselves, cause a great deal of moral suffering, besides interfering with efficiency both in business and social life.

The obstinacy of these afflictions has caused them to be looked upon with despair by practitioners; and the following considerations are intended to show that medical pessimism with regard to them is not well-founded; that they are in reality most amenable to treatment; but that the indications for this depend upon a clear diagnosis, the main elements of which I shall briefly indicate and illustrate by cases.

The crucial problem is the distinction between a true spasm[1] which is an irritation of some part of a reflex arc by an alteration of structure or perhaps biochemically, as against a true tic which is a movement dictated quasi-volitionally, not necessarily the result of an irritation in the periphery but inspired by an idea, desire, imperative need, *i.e.*, psycho-genetically. This is a real and practical distinction, and not merely academic; for from its appreciation flows one's choice of surgery, medicine or psychotheraphy as the remedial agent.[2]

For succinctness, the main diagnostic distinctions are collected in the following table, and further elucidated in the commentary and cases which follow. I have not gone into the details of treatment, that of the surgeon not coming within my province; while the medical and psychic measures would require so much space for their description as to unduly prolong this article. The main principles, however, are described elsewhere[16]; and the technique of their application has now been mastered by a considerable number of neurologists. My main object in this paper is to emphasize the extreme importance of correct diagnosis.

Spasm.	*Tic.*	*Chorea.*	*Cerebellar and Rubro-spinal Tremor.*
Sudden, resembling electrical stimulation.	Brusque and brief, slower.	Still slower.	Not sudden but regular and increasing by movement.
Rhythmic and synchronous, or in lightening waves of same movement.	In volleys of similar movement repeatedly.	Irregular, not synchronous.	
		Extreme variability in movement, with tendency to unilaterality.	Similar oscillations.

Spasm.	*Tic.*	*Chorea.*	*Cerebellar and Rubro-spinal Tremor.*
	When tonic, distinguished from stereotyped act by absence of catatonic attitude.		
Muscles often enfeebled.	No weakness, often hyperkinetic hypertrophy.	Myasthenia, hypotonia.	Myasthenia, hypotonia, or the reverse.
Exaggeration of reflex concerned only.	Reflexes normal.	Reflexes often modified.	Reflexes increased.
Distribution of peripheral nerve.	Locality condition by an idea.	Laterality.	Laterality or not.
Often painful, always distressing, no craving.	Painless.	Sometimes painful.	Never painful.
Persists in and may interrupt sleep.	Tic disappears in sleep.	Sleep interfered with.	Disappears in sleep.
Purposeless.	Pseudo co-ordinate, intentional act.	Purposeless.	Purposeless.
Irreproducible voluntarily, unmodified by volition or emotion?	Influenced by emotion or volition, but impulsive and followed by satisfaction, always arrestible (leaving no trace) by a subterfuge, a neutralizing act, inefficacious mechanically or physiologically, but effective psychically; also variously by solitude, distraction, position, etc.	Practically incontrollable by will, aggravated by emotion.	Minimized at rest.
Variable ætiology, but generally peripheral irritation, *e.g.* trigeminal neuralgia (which is not a true tic).	Psychasthenic character. Similar heredity, but always first generated by a determining stimulus; it is the sequel to the unhindered repetition of a once voluntary purposive act, becoming an impulsive obsession.	Acute rheumatic diathesis, probably bacterial. No similar heredity.	Variable neoplasm.

Thus, if the motor reaction is consecutive to pathological irritation at any point on a bulbospinal reflex arc, it is a spasm.

If the cortex is or has been involved in its production, it is not a spasm.

Should it present, in addition to the fact of cortical participation, the aforementioned distinctive psychological features, it is a tic.

Jacksonian convulsions, hemiathetosis, and the tremors preceding or following hemiplegia are all easily distinguished from both spasm and tic by accessory characters well known to every neurologist, which need not here be discussed.

This κακοηθης which invariably precedes the explosion of the true tic, ranges it among physiological acts, all of which when postponed beyond their due period will cause intense desire for their performance, which is followed by relief, just as is the tic. It is, however, a physiological act *perverted;* for it is ill-timed, being dependent upon no adequate stimulus, being unnecessary to the body's health or ultimate comfort, and being beyond the power of inhibition by the patient's enfeebled will, which evidences itself, as a rule, by other stigmata of the psychasthenic state. Into these I cannot enter here, save to mention the scrupulosities, timidities, feelings of inadequacy, desire for peculiarity, as well as the want of correspondence of the emotions with the real situation, showing itself by intense joy or sadness over trifles, the morbid fears, and the painful anguish, sometimes indeed *à propos* of nothing which such patients exhibit. The arousing of this last symptom when the patient tries to suppress the tic is pathognomonic, distinguishing it from a true spasm. The psychic symptoms of these patients are described with much insight and fulness and clarity by Janet[3]. The following cases illustrate these points:—

I. Occipital neuralgia and pain in the neck led the patient to try various positions to allay the agony, in the course of which he found that rotation to the right brought transient relief. By dint of repetition, the movement became involuntary (Brissaud and Meige).

II. In this case, the subject used to spend the whole evening inert, arms folded, without reading or working, tilting his head forward or backward to re-discover a "cracking?" in his neck from which he suffered—a proceeding which gradually developed into a tic (Brissaud and Meige).

III. In another case, a school girl was dissatisfied with the place allotted to her in the schoolroom, and pretended that she felt a draught on her neck coming from a window on her left. The initial movement was an elevation of the shoulder as if to bring her clothes a little more closely round her neck; then she commenced to depress her head and indicate her discomfort by facial grimaces; and these eventually passed beyond voluntary control (Raymond and Janet).

The three cases just cited illustrate the causation of tic by definite peripheral stimulus.

IV. A case arising from a habit attitude was that of a woman who used to pass the day sewing or knitting at her window and amusing herself from time to time by pensively looking out into the street. Not long afterward, she noticed how much more pleasant it was to allow her head to turn to the right, and how troublesome it was to keep it straight. At length she found this impossible, except with the aid of her hands (Sgobbo[4]).

V. Another case of habit movement is that of the tic of the colporteur *i.e.*, the heaving of the shoulders due to the habit of carrying heavy weights upon them[5].

VI. The peripheral source of tic is well illustrated by the case Lannois[6] caused by the constant looking at a papilloma on the nose and cured by the removal of the growth.

VII. The following case[7] is that of a man forty years of age, with a left torticollis dating back twenty months. His account of its origin was to the following effect: For some years he had been employed in a commercial office, where from seven in the morning to eight at night he was occupied in writing, head and body being turned to the left. At the beginning of 1900, consequent on a succession of troubles, he noticed that his head was twisting round to the left in an exaggerated fashion while he was writing; and the rotation gradually began to assert itself at other times, when he was reading, or eating, or buttoning his boots. Even apart from any other act, the rotatory movement soon became incessant, continuing while he was on his feet, but vanishing completely if he lay down or if the head was supported. At present he had the greatest difficulty in writing, for his head at once deviated violently to the right.

At the Congress of Limoges in 1901, Briand reported the following case:

VIII. As the result of a bicycle accident, a torticollis developed in a young man, which ordinary treatment was sufficient to cure; and it remained in abeyance until he entered a government school, when its place was taken by a tic of the shoulder, with twitching of the mouth and eye. At the approach of the annual vacation, the tic disappeared, and the torticollis, for some reason or other, became obvious again. The latter had once more been controlled by the time the holidays were over; but on the patient's re-entering school, the shoulder tic again manifested itself, and this sequence recurred several times. A permanent cure was eventually effected, but he continued as psychasthenic as ever.

I quote now a case showing the extension and the failure of surgical operation:

IX. The patient, forty-nine years of age, was suffering from muscular "spasms" that kept turning his head first to one side and then to the other. Fixation of the head between the hands assured a few moments' respite, but the convulsions were quick to re-appear. The left hand was constantly being brought up to the face in the endeavor to procure immobility, while the arms were the seat of abrupt, jerking movements intermediate between tremor and chorea. The various reflexes were normal; stimulation of the sole of the foot evoked a flexor response on either side, and no symptom of hysteria was forthcoming. The disease had made its appearance in 1879 when, without discoverable motive, the head had commenced to tremble and to work round to the left. Section of the tendon of the sternomastoid did not impede the development of the affection, which two years later increased in intensity, when the before-mentioned movements in the arms were superadded. The likelihood seemed to be that they were of the same nature and origin as the torticollis itself.

X and XI. The following cases, reported by Desterac[8] to the Congress of Toulouse, April, 1902, illustrate a lack of accurate neurological technique. The walk of one patient resembled the spastic gait of Friedreich's ataxia, that of the other was inco-ordinate like cerebellar ataxia; in addition both had "spasm" of the hand in writing, spasmodic movements of the trunk, and "spasmodic

torticollis." Both had club foot, and scoliosis, and one was afflicted with "spasm" of the face and left arm. In this case, further, there was nystagmus, together with loss of reflexes and difficulty in articulation, while fibrillary contractions were to be observed in his muscles. The other patient's reflexes were exaggerated; and he showed a double extensor response. Meige later saw the former patient and found that the scoliosis was not permanent, the deformation of the foot could be overcome, and at the same time he failed to convince himself of the presence of nystagmus and the absence of the knee jerks. Moreover he happened to observe the patient in the street unawares, and remarked how between two phases of bizarre contortions, his vicious attitudes and convulsive gestures almost entirely vanished. In fact, the clinical picture seemed to be quite other than that associated with organic disease such as Friedreich's disease, or hereditary cerebellar ataxia.

In the face, the criteria of diagnosis of spasmodic movements in no way differ from the foregoing; two examples will suffice:—

XII. A middle aged woman was seen by the writer with Dr. J. S. Lamb of Washington. About two years ago the affection began with slight, short twitchings of the left orbicularis. These became intermittently more extensive until the whole face on one side was affected. Sometimes the attacks ceased for weeks at a time, and then returned very violently. They were aggravated by cold air, speaking, eating, and emotions; but were not in the least arrested by the most powerful effort of the will, or by distraction or concentration of attention elsewhere. While not invariable in extent, the hyperkinesis never transgressed the domain of the seventh cranial nerve. It in no way resembled a co-ordinated act, though the opposite orbicularis sometimes participated slightly. This was due to bulbar overflow of the reflex; for though the patient was a nervous woman and she had become more so since her affliction, yet the movements were independent of this nervousness. They were accompanied by an uncomfortable sensation, and tears sometimes flowed during the spasm, but there was no pain. She was not sure whether they persisted in sleep.

Dr. Lamb informed me that a case which appeared to him entirely similar was cured by section of the orbicularis muscle at its insertion into the inferior border of the orbit.

Dr. Lamb's case is an example, along with the others, of true facial spasm, which is, as a rule, curable only by surgery, either by section of a nerve or other artificial interruption of the reflex arc in some part of its trajectory.

XIII. One day in June, 1900, the patient, this time a man, experienced a feeling of discomfort in the articulation of the lower jaw, the sequel to a slight alveolo-dental periostitis in the neighborhood of a bad tooth; and, interpreting the sensation as a new and grave symptom in the march of his malady, forthwith proceeded to investigate its development by playing with his maxilla. Then ensued a perfect debauch of masticatory movements, in which agreeable repetition of every conceivable grimace was joined to protrusion and retraction of the jaw in the search of articular cracks. He

became so wholly pre-occupied with this tic of mastication that ere long he had begun to pinch the mucous membrane in the inside of the right cheek between the second molars; and this fresh object of absorbing attention, in its turn, led quickly to some excoriation of the mucosa on both sides. No halt was called by the lower jaw to give the abrasions time for repair, with the natural outcome that they suppurated and paved the way for an attack of infective stomatitis with pain, fever, and malaise, which necessitated the application of the thermo-cautery to the ulcerated areas for its relief (Meige[14]).

XIV and XV. A recent example of the regrettable confusion derived from indiscriminate use of the word "spasm" is afforded by the two cases reported by Giriamo Mirto[9]. One was treated by alcohol injections in the seventh nerve, the other by neurectomy of the ophthalmic fifth. Both relapsed early, and Mirto inferred that the blepharo-spasm must therefore be psychic, one of these cases being a tic of professional movement and the other a tic due to faulty habitual attitude.

All hyperkineses of psychogenetic origin do not derive from the psychasthenic constitution, for sometimes they originate in a fixed idea suggested by imitation, direct command, or by some other procedure of suggestion as in the following case of Boetius[15]. (These are called hysterical tics.[10])

XVI. The patient was an Irish woman who became ill after having rubbed her neck with a mercurial ointment procured from a charlatan. The author tells us that at the end of the week the woman was completely cured by the use of sudorific tisanes, by the frequent application of fomentations, and by ointments, etc., applied to the neck; but that a short time later, having been imprudent enough to put again the mercurial ointment upon the nape of the neck, the same contortions returned. These were neglected for some time; consequently they augmented to such an extent that neither the remedies already applied nor any other were successful.

XVII. The second case is that of a Parisian woman, who suffered from a similar contortion of the head towards the left side after several injuries resulting from a fall on the sacrum which occurred over three months previous. The author states that for a short time his remedies appeared to cure the contortion of the head; but that it always returned, and at the end of two months he gave up the treatment. He added that since then, in spite of the efforts of different physicians and surgeons, the contortion remained as it had been since the beginning.

Though the elements in the latter case are insufficient for a certain diagnosis, yet in the former its removal by tisanes and poultices, and its production and reproduction by an ointment show that suggestion was the active cause, in which case it must be called hysterical. The criteria by which hysteria is diagnosticated are discussed at length by the author in the October number of *International Clinics,* 1908.

The derivation of such fixed ideas from medical sources has been shown by Bernheim[11] and Babinski[12] at various times, and also by the writer at

the Congress of Lille[13]. A translation of the communication appears in *American Medicine,* August, 1908.

Unfortunately space forbids the discussion of the manner in which these affections may be removed. It is mainly by psychic means, and much experience, skill, patience, and insight into the patient's psychic machinery are required[16]. The writer hopes to discuss the technique of treatment on some future occasion.

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