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# Dupuytren's Finger-Contraction: Further Remarks on the Theory of its Nervous Origin

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*FURTHER REMARKS ON THE THEORY OF ITS NERVOUS ORIGIN*

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# DUPUYTREN'S FINGER CONTRACTION.[1]

## Further Remarks on the Theory of its Nervous Origin.

The infrequency which Dupuytren's contraction of the palmar fascia is met with by most practitioners, and the scant literature of this interesting subject, together with its uncertain or unsettled etiology, lead me to offer some observations based on my personal experience with it.

No one who has ever operated upon one of these contracted palms, traversed by dense bands of glistening fibrous tissue, questions the locality of the contracting tissues. It is essentially a hyperplasia of the palmar aponeurosis fibres, with involvement of the areolar connective tissue of the palm, often taking in the skin also. But what cause can be assigned for its commencement is yet a moot point. It comes with mysterious quietness, and never is spontaneously arrested. Must we conceal our ignorance of its cause behind the word idiopathic hyperplasia, or can we definitely ascribe another? Gout has been commonly received as the most probable factor, but with this I have never been satisfied, for reasons I will soon give. During the past seven years I have observed not less than forty patients with this malady, of which I have private

[1] Read before the Surgical Section of the Academy of Medicine, February 13, 1888.

notes of at least twenty-five, and upon the study of these I venture to offer some points which seem to me of importance.

In 1884 I read a paper on this subject before this Academy of Medicine (*New York Medical Journal*, April 19 and 26, 1884), in which, after reviewing it, and reporting ten cases I had been studying, I advanced a theory of its causation, which to me was more satisfactory than the vague assumption of gout which Mr. Adams, of London, and some others think can be assigned to most every case, and which, for want of a better, has been accepted by authors generally.

My conclusions resulted in the following working hypothesis to explain the disease.

*First.*—A slight traumatism of the palm, often entirely forgotten.

*Second.*—A spinal impression produced by this peripheral irritation.

*Third.*—A reflex influence to the part originally hurt, producing insensible hyperæmia, nutritive-tissue disturbances, and new-growth, shown in the contracting bands of fascia and occasional joint-lesions resembling subacute rheumatism.

*Fourth.*—Through the tense contractions a second series of reflex symptoms, neuralgias, general systemic disturbances, and a reflection of the trouble to the corresponding part of the opposite hand.

Since the publication of that theory I have often been asked if subsequent cases have confirmed it.

I may now say—decidedly—yes! for the following reasons:

*First.*—Very few cases of Dupuytren's contraction

have specially strong hereditary or personal predisposition to gout, and many have no taint whatever of either rheumatism or gout.

*Second.*—No case I have yet seen has had both hands affected simultaneously. An interval of from a few months to several years occurs between them.

*Third.*—The neuroses of scar tissue in various parts of the body are universally recognized by surgeons and specialists, and are analogous to those accompanying Dupuytren's contraction.

*Fourth.*—The neuroses of which I shall speak are secondary to the development of the palmar bands, and can be started up oftentimes by hurting these.

*Fifth.*—The neuralgias and neuroses are usually relieved by operation, oftentimes as if by magic.

On these five points I will now narrate my experience.

First, as regards hereditary taint and a personal predisposition to gout, that are assigned as coincidences in the great majority of cases of this affection by two of the many observers. In my earlier cases I found no corroboration of this theory, and in my last twelve there is a striking absence of taint, except as follows.

In one patient of these twelve, the man's father had been troubled with rheumatism "all the time," and there was a family tendency that way, though his mother had not suffered from it.

In another case, a German laborer, there was no inheritance; but the patient himself had had a short two-weeks' attack in one arm and leg some years before I saw him.

In a third case, a lawyer, who had never had rheumatism himself, had one brother who had been subject

to it, but he was the only one out of a family of ten children.

In the other nine cases (they were all males), there was no hereditary or personal taint. Some were thoroughly conversant with their family history, and spoke most emphatically in the negative.

I have been endeavoring to reconcile my observations with those of Adams and Keen, who think it due to gout. The clue to their suspicions of this taint I find in a sentence of Dr. Keen's, which reads: "The large majority of all the cases I have seen had enlarged and tender finger-joints, the seats of more than suspicious pains." Now it is eminently true that, coincident with the palmar irritation, there is often a train of symptoms of nervous origin frequently simulating rheumatism, *and not only absent before the palmar disease came*, but disappearing, as I shall show later, when the disease is cured.

It would be difficult to review a dozen cases of any other disease in which there was less ancestral or personal history of the commonplace rheumatism, or what is rarer in this country, but of which the English and French writers speak so often, namely, gout. Therefore I feel we must look for other origin than this, and would repeat that, more than ever, I believe sincerely rheumatism has little or nothing to do with its causation.

It would be reasonable to expect that, if it depended on such a constitutional cause, it would appear more or less simultaneously in both hands, or that the feet would also suffer; while if it originated from injury sustained by one palm, and appeared long after in the other, often with coincident neuralgias following the upward course of the nerves from the first well-established trouble, and which

were repeated in a similar form in the opposite hand, we would find some corroboration of the theory I have advanced.

As a matter of fact, we do find that the contraction in one hand always precedes that in the other by from a few months to many years. In one case, the right existed twenty years, the left eight. In another, the right, twelve; the left, seven. And so they usually are found, with several years between.

In one old gentleman's case, one hand had been in trouble twenty years before it affected the other. Thus a chronic nerve irritation in one scar is—more or less—slowly reflected to the opposite side.

As regards the third point, scar-tissue in any part of the body may give rise to neuralgia in distant places. There are few physicians who have not seen painful sensations, radiating to a distance from a cicatrix, entirely relieved by excision of the scar. I have seen a number of such instances.

I recall one, several years ago, in a very intelligent old gentleman, brought to me by Dr. A. A. Smith, for intractable neuralgia of the entire arm and shoulder, the sole cause of which was a small, hard, linear scar of the palmar side of the last joint of his middle finger, cut by a falling window sash. I excised the scar, and the neuralgia entirely disappeared.

Some years ago I assisted Dr. Weir in removing the depressed cicatrix of an old bullet-wound of the thigh in a gentleman, the victim of a vicious neuralgia of the foot and limb. He was completely cured by the operation. Twice I have relieved neuralgia of the leg by cutting contracted fascia beneath the toes.

These are well-recognized surgical incidents, and strikingly analogous to the pains of many cases of Dupuytren's contraction.

*Fourth.*—There are associated with Dupuytren's contraction, in more than half the cases, a various list of neuroses, which constitute an unwritten chapter in the disease. To one who sees a case but seldom, many of these would not for one moment be considered as related to the palm trouble, at least in the sense of sequel. In some patients there is apparently no pain or sensation associated with it. In my experience, however, this is not usual, and the victim suffers from what he supposes to be another disease, which, however, is intimately related to the hand.

In my former paper I related one of the most striking cases that has come under my observation. It was of a man suffering for years from persistent and severe rhachialgia of the lower dorsal vertebræ, for which he had been blistered, cauterized, ice-packed, and dosed with drugs by distinguished medical men. The backache was instantly relieved by operation on the contracted fingers, and never returned.

In the case of a cloth-cutter, with both hands affected, who had given up work on account of the unbearable pain of the palm, especially the right, which was second to be affected, and which he could scarcely lift to his head or touch in the palm without suffering, I operated first on the left only—it being the tighter—and at once *the pain left the opposite hand entirely*, so that he could swing it above his head, brush his hair, lie upon it at night, and do many things that formerly caused great suffering. He remained cured.

A third case, already reported, with pronounced Du-

puytren for nine years, had had, several times during each year of this period, attacks of painful subacute swelling of the fingers and joints of the affected hands, which kept him awake nights, and caused increasing depression of spirits. He had abandoned business in consequence. Since operating on his hand four and a half years have elapsed, during which he has never had return of the pain. He is now in perfect health and spirits.

A fourth case—a physician with numbness and tingling in the palm when the contracting band was in its infancy—had, after the band grew, a neuralgic pain, darting occasionally from the palm up the forearm. This subsided six months later, when the opposite hand began to contract, and then the pain stayed altogether in that one.

Fifth case, also reported: Double Dupuytren's contraction. Has a burning sensation in the palm. No neuralgia.

Sixth case, also reported: A butcher had tingling sensation, persisting for two years, in the adjacent sides of the ring and little fingers, but no neuralgia. During the four years of his Dupuytren, however, he had had a writer's-cramp of the thumb, little, and ring fingers of the affected side, so that after writing a few moments cramps would seize them, they would stiffen up, and he would have to drop his pen and pull them straight.

I will make one more extract from my published cases of an interesting form of neuralgia associated with this contraction, which existed seven years in one, and four years in the other palm. For three years the patient had had numerous attacks of cervico-brachial neuralgia, lasting ten days. Each paroxysm of pain during this time was relieved by folding his arms, and tightly squeezing them to-

gether. During the same period he had, every few weeks, attacks of sudden neuralgia of the right palm, repeated at a few minutes' interval for several hours, and eased only by pressing the opposite thumb into the affected palm. He also had occasional neuralgia of the right leg and thigh, and hyperæsthesia of the back, painful to the touch of a towel. I regret that at the time he could not leave his business to be operated on, and has since passed from my sight. But I have no doubt the neuralgias and hyperæsthesia, one and all, would have been relieved by proper division of the contracted palmar hands.

Of my later cases, now published for the first time, I will narrate such as bear on this most interesting feature of the matter, omitting details irrelevant to this point.

Hugh McG——, aged sixty-two, truck driver. Dupuytren's contraction twenty years in the right, and eight years in the left palm. Six months before being seen began to have severe pain in the radial side and back of the left wrist. It was a burning pain, as of a coal burning deep inside the wrist. The latter became quite weak, so that he could not do a day's work during the four months prior to operation. The pain was worse at night, coming on when quiet in bed, and giving a sense of burning that caused him to keep it exposed on top of the bedclothes. He could not lie on his left side at all, without, as he expressed it, "squealing with pain." Sometimes this would dart up the arm to the shoulders, neck, and side of the occiput, so that he could hardly turn his head to that side for the pain in the neck. This paroxysm would usually last several hours.

He had most typical disease in each palm. In 1884 he came under the care of Dr. W. T. Bull, who kindly in-

vited me to operate on one hand by Adams' method of subcutaneous division, while he operated on the other by open section of the bands, to compare the relative merits of the two methods. I chose the left, because it was the older trouble and the seat of all the pain. I made twelve subcutaneous cuts on three cords, and released the fingers thoroughly.

From the moment of operation he had not a particle of pain in the wrist or arm, and never afterward lost a moment's sleep from the hand. He soon resumed work, and I saw him, long afterward, perfectly well and without recurrence. He remarked that "no one ever had such wonderful relief."

In March, 1885, Dr. M. C——, aged forty-seven, appealed to me to relieve him of Dupuytren's contraction of twelve years in the left, and four years in the right hand. It resulted from a tight ring, which had to be cut off the left hand twelve years before, and which was at once followed by the commencing trouble.

His case exhibited the following striking neuroses: On two occasions during the past four years he has had an attack, lasting several days, of "battery-shock" sensation in the left ulnar nerve. When I saw him he had been having, for eight days, constant and severe neuralgia of the left ulnar nerve, worse sometimes in the forearm, sometimes in the arm toward the shoulder, and again in the pectoral region, like an angina pectoris. Part of the time it was a dull aching pain, and at others an acute neuralgia, for which he had had to resort to considerable quantities of morphine for relief. I operated under cocaine anæsthesia. He was completely relieved at once, and remains so at the present time.

The next case displaying a neurosis was in an old gentleman of seventy-two, with classic cords in both palms. For ten years it had existed in the right hand, and somewhat less in the left. He had occasional pains about the left shoulder, but that was nothing to him comparable to a notable sensation present most of the time in the right arm. From the shoulder down to the fingers there seems to be, to his sense, a great increase in size, as if it were distended to twice its natural bulk, giving a strange, unnatural feeling.

I excised, under cocaine, the entire well-marked and long band in the right palm. The delusive sense of increased size slowly left the arm. That was two years and a quarter since. I saw the patient a few days ago, and he remains free from pain or sensations. The cicatrix is without the slightest sign of return of trouble, and the play of the fingers perfect. By coincidence he volunteered the statement, which is of interest in this connection, that the knotted cord of the left little finger (never operated on), which had been rapidly getting worse during the year prior to my operation on the opposite hand, was now getting softer. Comparing it with drawings made at the time I could corroborate his statement.

Now as the trouble in this hand was a sequel to the other, is it not possible that curing the right might cause some retrograde action to go on in the left, if, as we see, there is unquestionably sympathy between the two?

In the case of Dr. S——, of this city, seen by me last year, there was occasional pain only in the band itself in one palm.

In the case of O. W——, aged sixty, the left middle finger drawn down, with increasing weakness and pain in

the forearm. Operated on by excision of the band. Pain relieved.

In the case of Dr. W——, of Virginia, whom I recently operated on, we have most interesting illustrations of the relation between the contracted palm and the distant pains. This gentleman, in middle life, without trace of rheumatism or gout, inherited or acquired, began to have Dupuytren's contraction three years since. He attributed it to carrying a whip, with heavy loaded handle, pressing his right palm, while in constant hard riding the left hand held the reins tightly. The left first showed trouble, neuralgia being an early accompaniment. The suffering was in the arm, shoulder, and side of the neck. Three months later the right took on the same pain. Both have been growing worse during the last six months, so that he has been broken down in his work. Occasionally, when riding, the neuralgia will attack his shoulder with a sensation as if he were being "clawed." Again, he is often seized with an intense pain at some distant point, as in one thigh or a spot on the arm. The neuralgia is now continuous. Two weeks ago he came to my office suffering as usual from pain, specially in the deltoid and brachial region—both sides. I at once operated, under cocaine, on the worst hand. Before I could get the dressing on the part he assured me the pain had entirely gone from that arm and shoulder. Five days ago, pain having continued unabated on the opposite side, I performed the same operation, namely, the open transverse incision of all the bands in the palm. The relief to the shoulder was complete and instantaneous, as it had been on the opposite. He has since remained absolutely free from neuralgia, and feels like another man.

There are some cases of well-marked bands that have no

accompanying pains or reflex sensations, so far as we can see. I suspect that the pain depends on the involvement of sensory nerve-filaments by the cicatrix, and that those cases have not entrapped the sensitive nerves at a disadvantage. They are not an argument against the influence of a cicatrix on distant parts, as an insensible play of nervous force can go on without subjective pain, as in sympathetic ophthalmia.

In the only case I have seen where there was a strong family tendency to rheumatism, and where the patient himself had it before the Dupuytren's contraction, I made a clean dissection of the fibrous band, and for ten days everything went well, until a stiffening and subacute rheumatism of the joints of the hand set in, which left a stiffness that has only moderately gone away at the end of a year and a half. The hands were left unstretched after the operation, and the trouble seemed to depend entirely on the patient's constitution. Adams and Keen speak of this incident occurring occasionally. In this patient's hand it was noted that whenever a piece of ice or cold object touched the band in his palm, it sent a severe pain up the ulnar nerve—a further proof, if that were needed, of the intimate relation of the two.

From this recital of painful neuroses associated with, and a sequel to, the onset of many cases of contraction of the palmar fascia, we find new strengthening of the argument for its nervous origin, especially considering the magical relief of pain by cutting the bands, the relief not infrequently extending to the opposite side of the body. In operating I have tried every method. I prefer excision of the band if it is well defined; or if not, and if the skin is much involved and the band matted to the tendon-

sheaths, then numerous transverse open sections. These small gaping wounds fill quickly with granulations, or else close by primary union, with a little wedge-shaped clot. The soft scar does not contract, and the wounds are entirely healed in from ten to fifteen days.

I operate preferably with cocaine anæsthesia and Esmarch's bandage. The only dressing on the palm after the operation, and before the Esmarch bandage is removed, should be thick, well-adjusted compresses of damp gauze, fresh from sublimate solution (1–1,000). No iodoform is needed. No stretching of the parts should be allowed for ten days, and then it is rarely needed. Splints may usually be discarded from the treatment as doing more harm than good.