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ON THE NEUROSIS FOLLOWING ENTERIC FEVER, KNOWN AS "THE TYPHOID SPINE."

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V.—ON THE NEUROSIS FOLLOWING ENTERIC FEVER, KNOWN AS "THE TYPHOID SPINE."

By WILLIAM OSLER, M.D.

In 1889 Dr. Gibney, of New York, described at the American Orthopædic Association a sequel of enteric fever which he called "the typhoid spine," and which he regarded as a perispondylitis, "meaning an acute inflammation of the periosteum and the fibrous structures which hold the spinal column together." He stated that his reason for the use of the term "was the production of acute pain on the slightest movement, whether lateral or forward, and the absence of any marked febrile disturbance or neuralgia." He described four cases; in the first, a lad of 15, towards the end of convalescence, complained of severe pain in the back, particularly in the lumbar region, and especially after any movement. There was no disease of the bone, no pain in the distribution of the sciatic or anterior crural nerve. He was seen in the autumn of 1882, with Dr. Beverly Robinson. A spinal brace afforded relief, and in the course of two or three weeks he was practically well, but the brace was worn for more than a year.

The second case, a young man aged 24, had an attack of typhoid fever which ran a normal course. After convalescence was well established he complained of pain in the back, but he was able to be up and about, and played tennis. After a fall at tennis the pain became very severe, and he suffered so excruciatingly that he could only rest in a recumbent posture. Deep pressure over the iliac region on the left side, and lateral or antero-posterior motion of the spine, caused excessive pain. He had some fever. The symptoms persisted from the latter part of November until the beginning of January, but it was not until March that he was able to get about.

The third case, a lad of 18, had typhoid fever in November, was convalescent by December 27th, and went to New York. On January 10th he fell while skating and struck his left hip. A week after this he had pain in the region of the lumbar spine. The stiffness became more marked and the pains increased in severity. On the 10th of

February he went to bed and was seen by a surgeon in Albany, who regarded the case as one of psoas abscess. There was no fever, no evidence of disease of the spine, but the patient could not move without exquisite pain. He did not recover until May.

The fourth case seems to me to belong to an entirely different category, as it was an instance in which, during typhoid fever, the boy had kept both limbs flexed on the abdomen, and during convalescence was unable to straighten them, an event met with in many protracted illnesses in which the patient lies curled up in bed with the legs flexed.

In 1890, in a discussion at the Association of American Physicians following the reading of a paper on some points in the natural history of enteric or typhoid fever, by Dr. James E. Reeves,* Dr. Loomis, Sr., referred to Dr. Gibney's observations, and to one of the cases he had asked Dr. Gibney to see. Dr. Loomis knew of no reference in literature to a similar condition. Dr. Jacobi, at the same meeting, besides protesting against the introduction of a new name, such as "typhoid spine," suggested that, in the absence of temperature, it might be one of two things, either a neurosis or a spondylitis, remarking that mild forms of spondylitis are not so uncommon as they are believed to be.

In the American Text-book of Medicine (page 90) Dr. Pepper remarks in his article on typhoid fever that he has observed in a series of cases "obstinate peri-osteitis of the sternum or of the crests of the ilia, or in two instances, judging from the location of the pain and from the effect of movement of the trunk, of the front of the spinal column." Eskridge also described a case last year.

I have not been able to find any other references in text-books or monographs on typhoid fever, either in English, French or German. My attention had not been called to the condition until recently, unless perhaps a case which I saw several years ago with Dr. Grasett, of Toronto, was an illustration; a young officer, invalided from India after a prolonged fever, had for many months, on the slightest movement, attacks of the most severe pain in the back, which incapacitated him completely, though when seen by me he looked strong and robust and had a good appetite. He subsequently got quite well.

*Transactions of the Association of American Physicians, vol. v., 1890.

The two following cases are, I think, illustrative of the condition which Dr. Gibney has described:

Case I.—O. T., aged 25 (Hos. No. 8201), admitted complaining of pains in the back, hips and stomach. The family history is good. His father and mother are living and well. One brother died of typhoid fever.

Patient was strong and well until July, 1892, when he had a very severe attack of typhoid fever with relapse. He was in bed for nearly three months; very slow convalescence. He remained well for three weeks, when the present illness began with pains in the back and hips, usually of a shooting character, and paroxysms of pain in the abdomen, of which he would sometimes have several in the day. He had to take again to his bed and was there for seven weeks, having much pain in the lower part of the back and down the front of the legs. He never apparently, from his account, had any paralysis. About June of this year he was well enough to go out and do light work about the farm. In the latter part of June he had another attack of severe pain in the back and abdomen. He had not to go to bed. There was much aching pain and shooting in the right leg from the hip down to the knee. In the latter part of July and in August he had severe attacks of diarrhœa. Since August he has been up and about, but not working, and has been able to go out shooting. At present he has slight pains at times in the back and in the legs, and yesterday there was an aching pain from the left knee to the ankle. The appetite is good. He never vomits, though he often has eructations. Bowels are costive. He sometimes has dyspnœa on exertion.

Present Condition.—Healthy looking, well-nourished man, with fairly well-developed musculature. He gives one the impression of a neurasthenic patient. Lips and mucous membranes of good color; tongue clean and moist; pupils equal; pulse 70° to 80°; no increase in tension. Practically the examination of the thoracic and abdominal organs was negative. The abdomen was soft and nowhere tender. The chief complaint is of weakness in the back, and it hurts him to turn in bed. He describes the pain which he had last year as beginning in the small of the back, passing around the hip bones and then up the back. Judging from the scarring, the chief trouble was thought to be in the lower part of the spine. There is still a little tenderness on pressure just above the left sacro-iliac

synchondrosis. There is no tenderness over the sacrum itself, or along the iliac crests. Patient gets out of bed readily and stands well; walks with a natural gait; does not sway with the eyes shut. After prolonged standing or walking he complains of great increase of pains in the back. The knee-jerks are present, a little exaggerated; there is no ankle clonus. The most careful examination of the spine fails to reveal any signs of organic disease. The urine is normal.

The patient remained in hospital for a little more than a week; took large doses of nux vomica, and was encouraged to believe that he had no serious organic disease. Subsequent examinations gave no additional information, but the patient evidently was highly neurasthenic.

Case II.—A. A., aged 21, architect's assistant, seen with Dr. King, May 10th, 1893. Patient has always been a healthy man and has never had any very serious illness. He is not of a robust constitution, and though bright, not of a very strong mental fibre. There are no special nervous troubles in the family.

In November and December last, patient had typhoid fever, an attack of moderate severity. On New Year's day he sat up for the first time, and convalescence was gradually established. There were no sequelæ, no complications, and early in February he went to his work. He gained in weight and looked very well. He remained at work about three weeks, complaining only at times of pain in the back and of being very tired after sitting for a long time. One day he was very much jarred in the back during a sudden jerking of a cable car in which he was riding. Early in March, after complaining very much of his back and of the pain on moving, and of tired feelings, he took to his bed, where he has remained ever since. Dr. King tells me that the chief symptom has been pain on movement. His general health has been excellent. The appetite has been good, he has gained in weight, and he has slept well. He has been nervous and at times almost hysterical. When quiet and at rest and not attempting any movement he does not complain of pain, but on turning or on attempting to get out of bed, or even the thought of the attempt to move the legs, is enough to cause him to cry out. The pains have been in the lower part of the back, extending sometimes up the spine and down the back and sides, more

rarely the front of the leg as far as the knee. He has had no fever, no chills, but has sweated a good deal. He has had no swelling of the joints.

Present Condition.—Patient is a well-grown young man, well nourished, musculature of moderate development. The palms of the hands are moist and sweating; he was somewhat excited, and at our entrance flushed over the cheeks and neck and upper part of the chest. Face does not indicate any special strength of character, rather the reverse. Pupils of medium size, equal, active; tongue clean. Patient in the dorsal decubitus, his usual attitude. On pulling down the bedclothes he implored us not to touch him, as he was sure it would hurt him very much. The abdomen was full, natural looking. On palpation he complained of a good deal of pain in the left iliac region, but on withdrawing his attention and pressing forcibly with the left hand in the region of the heart and asking whether he had pain here, the right hand at the same time could be pressed deeply into the iliac fossa without causing any disturbance. The deepest pressure in the lumbar and iliac regions failed to reveal any glandular enlargements or thickening. The inguinal glands not enlarged; no special sensitiveness along the anterior crural nerves. On asking him to lift the leg he said it was impossible, as it hurt him so much, but in a few moments, placing the hand beneath it, he lifted it apparently without pain. When lifted in a semi-flexed position he said it was impossible for him to straighten it, but in a few moments it could be readily extended and he straightened it easily on the bed. There was no special wasting of the legs. He could move all the muscles freely and was able to get up and stand on his legs if he took time. The sensation was perfect; the knee-jerks present, perhaps a little exaggerated; no ankle clonus. The feet and ankles were perspiring freely. No swelling of the articulations, and no pain on pressure of the muscles or in the popliteal spaces. On asking him to turn over on his left side he demurred very much, but gradually, and apparently with a great deal of difficulty, he got himself over. The legs could then be moved easily and freely; no pain about the hip joint, and the legs could be flexed and extended readily. The spine was straight; the lower dorsal vertebræ a little prominent. No tenderness at any point along the spinal column. On both sides in the lower lumbar and sacral regions he was sensitive at a distance of an

inch and a half or two inches from the middle line, and particularly towards the right sacro-iliac synchondrosis, and along the posterior third of the crest of the ileum. He stated that this was really the point of greatest pain. Any attempt at twisting the spinal column was very sensitive and we could not induce him to sit up. In the attempts to make this movement he seemed to suffer a great deal of pain and began to cry.

There were no sensory changes, no hemianæsthesia, no hemianopsia. The patient said that his chief trouble was more the dread of moving, lest it should cause pain, than any pain itself. Four days ago he sat up for a couple of hours, got out of bed himself and sat on the chair, but felt very tired, and the back was painful. Practically the examination in this case revealed neither Potts' disease nor neuritis.

He was ordered massage and electricity, and the Paquelin cautery to the back, given strychnia internally, and urged to sit up a certain definite time each day.

June 10th. A few days after I saw him he was able to sit up and did very well. Went out on the 30th of May and has been doing remarkably well ever since. Called to-day, looks in very good condition. No pain in the back; feels a little stiff; knee jerks are normal; condition good.

Cases II and III in Dr. Gibney's paper are very much like the one here mentioned, particularly in the fact that the symptoms developed after convalescence, and in both instances there was a slight trauma; in one a fall while playing tennis, and in another a slight fall on the left hip while skating. In the case reported here the patient also lays a great deal of stress on the jar which he received by the sudden jerking of the cable car. In both of these cases the prominent symptom was pain on movement, and there was an absence of all signs of organic disease.

An explanation of the symptoms in these cases is by no means easy. As already mentioned, Dr. Gibney regarded the lesion as a perispondylitis, an acute inflammation of the periosteum and fibrous structures holding the spinal column together; and with this view, judging from the quotation given, Dr. Pepper seems to agree.

Joint and periosteal troubles are by no means rare sequences of typhoid fever, but the symptoms do not usually develop (as in three

or four of the cases here described) at so long a time after convalescence has been well established. The periostitis, seen oftenest about the sternum and the ribs, proceeds as a rule, but not necessarily, to suppuration. I have in several instances seen a periosteal swelling disappear without suppuration. We do not have, so far as I know, protracted periosteal thickening, lasting for weeks or months, *without suppuration*; and it is difficult to conceive of the attacks of pain, such as are described in the second and third cases of Dr. Gibney's, and in the second case which I here report, lasting for months, due to a simple perispondylitis which in none of the cases passed on to suppuration. In both of my cases the general impression given by the patients was that they were neurasthenic; and while of course it would be very illogical to assume that all of the instances are due to the same cause, yet I cannot help feeling that many of them are examples simply of the painful neurosis formerly known as "spinal irritation," and analogous to the painful condition met with in the "hysterical spine" and the "railway spine," in both of which the patient may have pains on the slightest movement of the back or of the legs. In the second case reported, the whole behavior during the examination was that of a hysterical patient; thus, he could not think of lifting a leg—even the idea was enough to give him agonizing pain, and yet in a few minutes he lifted it himself and got out of bed. So also the slightest pressure in the lumbar or iliac regions would cause him to scream out, but while his attention was directed elsewhere, pressure could be made with the greatest facility. The rapid recovery in a few days, with disappearance of all the symptoms, is quite inconsistent with a chronic perispondylitis.

I have recently seen a case presenting somewhat different features, but which I think may also be reasonably classed as a post-typhoid neurosis.

Case III.—A. B., aged about 30, New York City, consulted me Nov. 2nd, 1893, stating that he had had trouble with his spinal cord. Family history was good; parents living; one sister, however, is insane.

He was nervous as a boy; used to tremble very much when excited, and had "nervous fits." He had gonorrhœa three or four times; never had lues; acknowledges excesses *in venere*. Takes alcohol, but is not a hard drinker.

September 23rd, 1891, he had an attack of typhoid fever of unusual

severity, with prolonged delirium, extensive bed-sores, and very great prostration. Convalescence was not established until January 10th, 1892. During and after convalescence he was very nervous, and had uneasy pains in the legs, his feet were tender, and he tired very easily. He had no pain in the back, no soreness, but the tenderness in the feet and nervous feelings persisted for six or eight months after convalescence, and he does not think that they have ever entirely disappeared. He attended, however, to his business, gained in weight, and felt pretty well, though never entirely free from uneasy sensations in the feet and legs. In the spring of this year these symptoms increased, particularly after some sprees. He had neuralgic pains in the legs, and he felt weak and unstrung, and evidently got into a very nervous condition. He had a dread of walking, and could scarcely force himself to go as far as the corner of the street. He slept badly and got into a state of extreme neurasthenia. There were twitchings of the muscles, and the feet and hands felt numb, and he complained that when his shoes and stockings were off there was a smooth feeling as if something was between the feet and the floor. At this time a doctor in New York suggested there was oncoming spinal trouble, and stated that in testing the sensation over the spine with hot and cold water he could not distinguish between them. He ordered him electricity and massage and general tonics; for the past seven or eight weeks he has not been at work and has improved a good deal.

Present Condition.—Tall, able-bodied man; looks a little pale; gait is normal; not spastic; station good; no Romberg symptom; no atrophy of the muscles; legs scarcely in proportion, however, to the rest of the muscular development. The spine is straight, nowhere painful on pressure, no special prominence of any vertebra. Sensation is everywhere good, no retardation, distinguishes easily between heat and cold. He thinks that about the feet and ankles the sensation is a little blurred and unnatural. He feels, however, a sharp point, and distinguishes readily different objects, and the thermic and painful sensations are unaffected. He has no abnormal sensations about the back and abdomen, and has not any sense of constriction or girdle pain. There is no vaso-motor disturbance. He sweats, however, easily and the hands are clammy, and he has had at times, he states, marked blueness and congestion of the feet, and they are often cold in the morning.

The reflexes are increased; knee-jerks active, particularly on the left side, and a slight ankle clonus can be obtained. The skin reflexes are normal. There is no disturbance of the special senses. The pupils are a little large, equal, react to light. The optic disks are normal; there is no restriction of the visual fields.

The examination of the thoracic and abdominal organs is negative.

Here, after a protracted and severe attack of typhoid fever with delirium, severe nervous symptoms and tardy convalescence, the patient had disturbed sensations in the feet and legs. The symptoms diminished somewhat within five or six months, never entirely disappeared, and recurred with intensity during a period characterized by pronounced neurotic manifestations. Unlike the cases before described, there were no pains in the back or abdomen, only a sensation of weakness. The symptoms suggest: (1) central (spinal) lesion; (2) neuritis; or (3) a neurosis. From his statements it was evident that the doctor in attendance feared a central affection, but it would seem that the patient's condition now, two years from the date of the fever, would speak very strongly against any such view; nor does the case conform in its clinical history to a neuritis. The man insists that the same feelings which he has now in the feet were present during the convalescence from the attack and some months subsequently. There did not appear to have been any very special muscular weakness such as sometimes develops after a protracted attack of typhoid fever without any evidence of peripheral neuritis. In the paper by Dr. George Ross on Paralysis after Typhoid Fever* he refers to these cases in the following words: "It is not unusual after typhoid fever of considerable severity to find a definitely enfeebled condition of the lower extremities persisting for some time, and sometimes a person never entirely recovers his capacity for walking long distances. Such paretic cases have never been specially studied, but it is probable they would, if any should fall under the head of defective innervation from prolonged exhaustion of the nervous centres." In the case under discussion, the history and the general appearance of the patient suggest rather a neurosis following typhoid fever. The paræsthesias such as he described are not uncommon symptoms of neurasthenia, in which also exaggerated reflexes are not at all infrequent.

* Transactions of the Association of American Physicians, Vol. III, 1888.

It is not unlikely that under the designation of "typhoid spine" Dr. Gibney has described several distinct affections, and I would not be understood as holding that there may not be a perispondylitis. Nor indeed are all the painful backs in typhoid fever neurotic; thus, a patient recently under my care (Hos. No. 8049) was admitted in an attack of moderate severity about the end of the third week, the temperature falling to normal by the 26th day; then after a period of apyrexia of seven or eight days he had a well-marked relapse of about two weeks' duration. During convalescence he began to complain of severe pain in the back of the neck, and at the attachment of the muscles of the occipital bone. There was no actual tenderness in the vertebræ, and movements to and fro and laterally were not associated with any very great pain. An application of the Paquelin cautery relieved it for a few days, and then it recurred. The examination from the pharynx was negative. The condition persisted for at least two weeks, and while at first confined to the neck, subsequently he had soreness and stiffness of the back; he walked stiffly and held himself very erect. He says that it is better when moving about than when lying down. No special tenderness in the spine, and no sharp pain; no increase in the reflexes; no indication of neuritis. He gradually improved, and when discharged he was very much better, having gained 11½ pounds in weight.