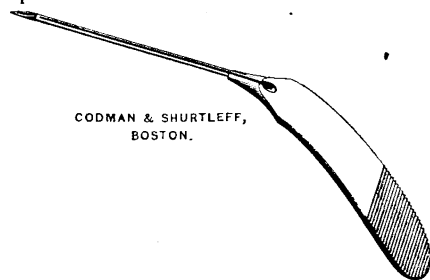


clude the groove, and the pus always escapes readily along it. The handle is set at an angle to allow the ready use of the knife beside it. After the opening is made with the knife a director is slipped in, and the sharp needle removed. If after the incision one



instrument is withdrawn before another is introduced a slight shifting of the muscles may close the opening, which is then difficult to find again. The operation done thus with an exploring needle is finished ordinarily in a few seconds, and the pain is reduced to a minimum, an important consideration when ether cannot be administered.

MINOR INJURIES OF THE SPINAL CORD.¹

BY BENJAMIN H. HARTWELL, M. D., OF AYER.

THE subject presented for consideration to-day comprises a class of diseases arising from slight injury to the spinal cord, and is based upon the notes of nine cases, in which both the injury and the force used to produce it were slight. Five of the nine were passive or subacute hyperæmia, and four a mild form of chronic myelitis. These cases were of from two to twenty years' duration, and were not severe enough to prevent a certain amount of labor being performed.

Erichsen, in his work on Concussion of the Spine and Nervous Shock, says: "The primary effects and secondary results of slight injuries to the nervous system do not appear, as yet, to have received that amount of study and attention on the part of surgeons that their frequency and importance alike demand." These minor injuries are of special interest to us, as practical physicians, from their comparative frequency, their liability to result in permanent change in the substance of the cord, and because we can do much in the way of relief and cure by appropriate treatment.

Their importance in a medico-legal point of view is at once recognized; for while there could be no doubt of its gravity if the injury were severe, in the form under consideration there is not only no external sign, but a limited time may elapse without symptoms, of injury. The question presents itself here, as to whether we have in every case of injury to the cord sufficient evidence—objective symptoms—to enable us to determine the fact. Dr. R. M. Hodges² says: "The symptoms of actual organic changes in the spinal cord, when they follow concussion, are by no means vague and obscure manifestations. They are objective, and admit of recognition and appreciation. They are incapable of being simulated with an accuracy which will permit of long deception. The subjective symptoms following alleged concussion of the spinal cord

are ill defined, vary in degree and character, and such as permit of ready simulation. If objective and subjective symptoms are both present in any one case, as not infrequently happens, the objective symptoms predominate." Hamilton³ says: "I do not think that any jury should give damages unless some physical signs of actual spinal disease are present." While I would not like to take the position absolutely that the objective symptoms are well marked in every case of so-called concussion, it must be rare indeed for a doubt to remain in the mind of one who has watched a case from the beginning. Those vascular disturbances which act as a cause of the symptoms in these cases, and which may be followed by inflammation, or changes in the substance of the cord, must soon produce a train of symptoms by which the lesion can be recognized.

CASE I. J. B., aged forty-four, a strong, able-bodied man, was shaken in a railroad accident, but not thrown from his seat. He was seen within a few minutes, and complained of pain in the lumbar spine and numbness in the extremities, chiefly on the right side. There were no external evidences of injury. The temperature, pulse, and respiration were normal. The catheter was used twice in the first twenty-four hours, but not afterwards, though he seemed to have a good deal of difficulty in starting the urine. The bowels were constipated. No special change took place until the tenth day, when there was a dusky, mottled appearance of the skin over the upper portion of the body, rapid breathing, cardiac murmur, intolerance of light, and muscular twitching. He stated that the left hand felt as if encased, that there was a band feeling around the left half of the body under the nipple, that he was unable to see plainly, and had a severe pain in the back of his head. He could move the left arm and leg better than the right, and there was some anæsthesia, more marked on the right side. This condition, changing to better then worse again, remained for several weeks, when improvement commenced, with the probability of perfect recovery.

In this case the objective symptoms were sufficiently prominent for us to pronounce it an injury of the right half of the cord.

In another case, where a locomotive demolished a carriage containing a young lady, and threw her some distance along the side of the track, she remained standing while being subjected to a thorough examination in view of possible litigation. There was no complaint of pain in the back, and not till the fourth day did symptoms denoting spinal injury show themselves, when she grew rapidly worse, was confined to the bed, but after five years has made a partial recovery.

That form of spinal injury produced by concussion, or the jar of the railway carriage, is an interesting one in view of the increasing number of men who by occupation are compelled to maintain an erect position for from six to twelve hours a day, subjected to the constant jar of the carriage. Hamilton⁴ mentions cases of subacute spinal hyperæmia occurring among city car drivers; and Hodges,⁵ in the paper referred to, speaks of the jar to which railroad men are exposed as being sufficient to produce nervous disease. The trifling jar seems necessary to produce hyperæmia, position alone not being enough. In Cases II. and III. a rough ride aggravated all the symptoms, while any position in

¹ Read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1883, and recommended for publication by the Society.

² Boston Medical and Surgical Journal, April 28, 1881, page 389.

³ Nervous Diseases, 2d edition, page 271.

⁴ Loc. cit., pages 256, 257.

⁵ Boston Medical and Surgical Journal, April 21, 1881, page 365.

which the jar was removed gave comparative relief. Spinal hyperæmia is favored by the peculiarity of the circulation of the blood in the spinal canal; and we can readily understand how blood stasis, to a certain extent a natural result of these anatomical conditions, can become abnormal. Jaccoud says that the tortuous course of the veins and the absence of valves favors it. Bartholow¹ puts the arterial and venous capacity as one to four; that is, the capacity of the veins is four times that of the arteries.

CASE II. Mr. S., locomotive engineer, sixteen years on the road. General health good. After six years of service there was a sense of weakness and easy fatigue in the feet and legs, and pain in the back and head after hard drives. These symptoms gradually grew worse, and seven years after his condition was as follows: Temperature, pulse, and respiration normal. There was pain more or less constant, described as a "hard ache," extending from the sacral region up the spine, and through the head to the supra-orbital region. There were numbness, prickling, and formication in the extremities; the first two most noticeable below the knees, the latter on the back of the neck. The feet and hands were cold, the legs felt as if made of wood; at times, when the pain was excessive, he would stagger in walking, and in the dark had a constant fear of running into a post or other obstacle, so that it was his custom to walk in the middle of the street. If he stepped too heavily, or struck his hand firmly against an object, he would feel the blow in his head. He told me that he had stood on his toes during many miles of travel to avoid the jar. There was frequent urination. The rectum was not involved. He saw flashes of light, and sometimes felt as if a shade were placed directly over the eyes. There was lack of coördination; at times he could see best with one eye closed, it made no difference which one. There was some tenderness on deep pressure over the last cervical and first dorsal vertebræ. The cincture feeling was not present. Tendon reflex was natural. Ergot and belladonna were given in full doses; the latter afforded the most relief. After two months of rest he resumed his place on the engine, though not fully relieved; at the end of a year restoration to health seemed to be complete, and remains so after three years.

CASE III. Mr. M., conductor, has been on the road seventeen years. His physical condition is good. About seven years ago he commenced having pains in the lumbar region, and irregular pains down the left leg, with prickling and formication. When I saw him the trouble had increased, and involved both legs, the prickling and formication being most noticeable on the plantar surface of the feet and across the upper surface of the toes. There was occasional stiffness of the ankles, from muscular rigidity, and a feeling described as that of walking on a thick Brussels carpet, which would sink under the feet. There was a good deal of pain in the lumbar spine, and irregular pains radiating down both legs to the feet. These symptoms were always worse after a hard day's work, a long walk, a ride on the horse cars, and in hot weather. They were not present, as a rule, during the first part of a day after a night of rest. Latterly there have been some muscular cramps in the left leg, and the trouble seems to be extending. There is slight tenderness over the first lumbar vertebra. The pain in the leg is relieved in a

measure by strong flexion without regard to the position of the body. This case has but recently come under treatment.

The above were two cases of passive or subacute hyperæmia, the first involving the cervical, and the last the lumbar, enlargement of the cord. They were caused by the continued jar of the railway car, irrespective of any injury that might by its effects upon any portion of the spinal medulla predispose it to lesions of this kind. To what extent these diseases prevail among railroad employees I am not able to state, but a somewhat extended inquiry leads to the belief that they are more rare than has been claimed by some authorities.

Backache is said to be a common complaint among the class of men referred to, but I am ignorant of its cause, — whether it is muscular, in the sacral plexus of nerves, or depends upon an increased amount of blood in the spinal canal. In view of the cases just mentioned, which for the first few years were only indicated by an occasional backache, pain in the back among railroad men demands the closest investigation.

Most of the cases of which I have notes were caused by slight concussion, blows or other means, which produced no external signs of injury. The patients were able to attend in part to their daily duties. With some the trouble excited but little attention for months, although they were conscious of its effects, and gave a clear history back to the time when the injury was received. Rosenthal says: "In order to recognize the initial symptoms of myelitis we must pay strict attention to the first peripheral symptoms of medullary irritation. These are vague neuralgic pains, which are often unrecognized, or wrongly interpreted, circumscribed sensation of cold or numbness in the limbs, circumscribed anæsthesia, etc."

The following cases will serve to illustrate: —

CASE IV. Mr. P., twenty-three years ago, was injured in the United States service. While carrying one end of a long box the opposite end was dropped, and he felt the shock in the lower part of the spine. He served out his term of enlistment, and has since worked at his trade, that of cabinet maker. From the time of the accident he has had more or less pain in the back, prickling and numbness in both legs, chiefly in the soles of the feet, and a cord-like feeling from the superior spinous processes of the ilia around the back. For the past three years he has felt as if a cushion were interposed between the bottoms of the feet and the ground, the legs have felt heavy, and the toes have scraped the ground more or less in walking. He is apt to trip upon a stone or uneven surface. There is a good deal of muscular atrophy. The general health is good, though he has lost about thirty pounds in weight during the last few years. The bladder and rectum are not involved. Tendon reflex is absent in the left leg, and very slight in the right. There is some tenderness on deep pressure over the first lumbar vertebra. The most pain is experienced, and all of the symptoms are aggravated, after the completion of the work of the day. The best sleep is obtained during the first hour or two of the night, after which the position is frequently shifted, and the sleep disturbed by pain. Strongly flexing the legs and thighs gives some relief to the pain. He is worse during hot weather.

CASE V. A young, able-bodied farmer received an injury in the lower dorsal region by the sudden turning

¹ Medical News, December 16, 1882, page 673.

of a plow, caused by its striking a stone. He did not consult his physician for a year after the accident, although he felt pain from the first. At the end of two years his condition was much like that of Case IV., except that it was milder in degree. At no time had he given up the management of his farm, though compelled to obtain help for the harder portion of the work. In the course of a year cure seemed to be complete. He remains entirely well at present, three years after recovery, having in the mean time performed the hardest kind of farm work. Treatment consisted of moderate exercise, dry cups on each side of the spine opposite the lumbar enlargement, night and morning; galvanism; one half, increased to one, teaspoonful of the fluid extract of ergot, three times a day, occasionally combined with belladonna. The same treatment has been applied to Case IV., always with an amelioration of symptoms for a while, but circumstances over which I have no control prevent its being carried out satisfactorily; and, though still under treatment, the probability is that there will be a gradual increase of the disease.

The symptoms in these cases point, with hardly a doubt, to transverse lesions of the lumbar enlargement of the spinal cord. Case IV. is probably one of chronic myelitis, with impairment of the functions of the gray matter, and that the trophic function is becoming affected is shown by the muscular atrophy. Case V. is one of passive hyperæmia. Erb¹ says that "Hyperæmias do not always extend over the entire spinal canal, but often are confined to the cervical, or lumbar, or other portions;" and again, "in a few cases something is seen which lies between the condition of congestion and that of inflammation." The line between hyperæmia and myelitis is probably an artificial one; they may be regarded as different stages of the same disease. Profoundness of the disturbances of sensation and motion is perhaps the best point to judge by at first, if we are to make a distinction between them, and later the result of appropriate treatment, cure only resulting when hyperæmia alone exists. Therapeutically it makes no difference, as the treatment would be the same whether we have before us a case of passive hyperæmia or a mild form of chronic myelitis.

The early symptoms of some of these cases are like those of sciatica. Case III. was markedly so, the only complaint for the first three or four years being pain in the back and left leg. The location of the spinal lesion explains this, for Ranney,² in a diagram giving the relation of the spinal cord, nerves, and vertebræ, shows that the sciatic nerve rises from the lower portion of the lumbar enlargement of the cord, opposite the twelfth dorsal and first lumbar vertebræ. Tender points along the course of the nerve will help to distinguish a simple neuralgic affection; moreover, in congestion and inflammation, before many of the characteristic signs appear, there will be an aggravation of the symptoms after continued exercise, prolonged recumbent position, and during the latter part of the night and first part of the day; again, these cases are usually worse in hot weather. A history of injury to the back is so common that to be of value in diagnosis it must correspond to the appearance of first symptoms.

Reflected troubles, and those of a hysterical character, must be carefully excluded. In a case (not included in the nine) with a history of injury, and many

of the symptoms of spinal hyperæmia, complete relief was obtained by the removal of some vascular growths from the uterus with the curette. Trial of remedies will sometimes assist in diagnosis. In progressive cases, that is, in all acute cases, and in cases chronic as regards time, but in which there is locally an active state of the circulation, strychnia does harm, while ergot and belladonna will usually give relief to the distressing symptoms. In functional cases, on the contrary, and in those old chronic ones characterized by debility and loss of muscular power, strychnia almost always does good, and is sometimes very effective.

Some of the cases of minor injury of the spinal cord fully recover, others remain greatly relieved, and a few relapse into almost helpless cases of chronic myelitis. In the latter the change is frequently sudden. Those that get well are probably only hyperæmia. Of the nine cases which form the basis of this paper (the cases of concussion from railroad accident are not included), three remain cured after the lapse of several years, three are still under treatment, with a prospect of cure in one, one is gradually growing worse, one remains better than before treatment, and one, after seemingly being relieved of passive hyperæmia for two years, had a sudden lighting up of the disease, without apparent cause, and is a helpless invalid. The cincture feeling was present in all of the above cases, except the two caused by jar of the railway carriage; and, again, excepting these two, all were aggravated by the recumbent position maintained for more than a few hours at any one time. One voluntarily assumed the knee-chest position in bed to obtain relief from pain. As a rule, reflex excitability and electric contractility were not markedly changed; if at all, they were increased, though in Case IV. they were almost entirely absent, more so in the left than right leg. In a case of syphilitic myelitis, now under treatment, simply touching the bottom of either foot brings about spasmodic movement in both legs.

This paper would not be complete without giving an outline of the treatment which has been found beneficial in the above class of diseases of the spinal cord. Rest is of the first importance, not absolute in the recumbent position always, but in the sense of relief from care and ordinary duties. As previously mentioned, the patients in all of the nine cases noted were, at the time application was made for relief, engaged more or less actively in labor; and, although in two or three of them treatment was carried on without change in this respect, still it was much more satisfactory when partial or complete suspension of work was obtained.

Ergot and belladonna, as recommended by Brown-Séquard, have been found to be remedies of undoubted efficacy. Belladonna is more prompt in its action, especially when there is some vesical complication. Ergot is of most value when given in large doses, and long continued. The latter, usually in a few days, affords some relief to the intense pain in the back; the former, given so as to produce its full medicinal effects, in many cases stops all pain for the time, and if continued has a permanently good effect. In acute cases ergot seems to do harm, and digitalis, aconite, and bromide of potassium should be given instead. In Case I. ergot aggravated the symptoms on two trials, while the good effect of digitalis was seen, to a certain extent, within a few hours after administration. Bartholow³ says: "Its [ergot] administra-

¹ Ziemssen, vol. xiii., p. 203.

² Applied Anatomy of the Nervous System, page 340.

³ Medical News, December 16, 1882, Clinical Lecture.

tion in spinal inflammation is improper, because of the peculiarity of its action. It induces an anæmia of the arterial distribution, — an ischæmia, properly speaking, — but the blood thus driven from the arterial side accumulates on the venous side." Sponging the spine with water as hot as the patient can bear it, the sponge being drawn rapidly along the whole length of the spine for ten or fifteen minutes morning and night, with the daily application of an irritant to the same surface, does good in either the acute or chronic forms of the disease under discussion. Peripheral irritation surely has some effect upon the nutrition of internal organs, especially when these organs are placed in direct anatomical relation to the surface. The results published by Strumpf, of the treatment of spinal sclerosis by the faradic brush, are strong proofs of the power of mild peripheral irritation.

Galvanization has been proved to act upon the cord itself, and is one of the best agents that we have in the treatment of the chronic form of spinal troubles. Unfortunately, in private practice in the country it is impossible to use it in every case with that frequency and perseverance necessary to produce good results. In one case it seemed to aggravate the symptoms; in the few others in which it was used it was undoubtedly a help. Dry cups, placed on each side of the spine, once or twice daily, are means which should not be omitted in the treatment of any form of spinal congestion or inflammation. In addition, the patient should be placed in the best possible condition as regards his surroundings, diet, clothing, amount and nature of exercise, avoiding dorsal decubitus, but resting upon the side, or with elevation of the body, shoulders, and head, as may be determined by trial to give the most relief.

There are other remedies of known value, but the above have been applied in the treatment of the cases considered in this paper.

FIBROMA OF THE VAGINA.

BY EDWARD T. CASWELL, M. D., PROVIDENCE, R. I.

In the number of this journal for July 19, 1883, Dr. Davenport, in his report on Recent Progress in Gynæcology, refers to an article of Professor Kleinwächter's upon Fibromata and Myomata of the Vagina, in which the latter states that he has been able to collect but fifty cases of these tumors recorded in medical literature, and adds to these three of his own. As eight days previous to the above date I had operated upon a case of fibroma, which had been the first of my own experience, and as from the above statement I conclude that such growths are at the least not common, I venture to place it on record.

The patient was a young lady, who was soon to be married, and who had been aware of some obstruction in the passage for about two years. Latterly the obstruction had seemed to increase. There had been no pain, and no disturbance of the menses. Some inconvenience was experienced in walking, and some in sitting. On examination I found a tumor in the middle line of the anterior wall, over the course of the urethra, as large as a pigeon's egg, its anterior extremity being about three quarters of an inch back of the meatus. It was not sensitive to pressure, and had a slightly elastic feel. An operation was advised for many reasons, not the least of which was the relief from anxiety that it would afford the patient in view of her approaching marriage.

A single incision in the middle line enabled me to easily enucleate the tumor, which measured in its long diameter about one and a half inches, and about three quarters of an inch in each of its other dimensions. Under the microscope it proved to be a fibroma. There was but little hæmorrhage, and the wall of the urethra was uninjured. Two or three sutures of catgut, with a small piece of drainage tube, some absorbent cotton, and a napkin, was all that was required in the way of dressing. Carbolyzed injections were freely used, and the catheter passed for three or four days. The tube was removed on the third day. The recovery was uninterrupted, save for a slight hæmorrhage on the day after the operation, which was checked by an injection of hot water. The wound was entirely healed by the eighth day, and the patient dismissed on the tenth. Except for the slight discharge of the first few days the young lady was conscious of no departure from her usual condition of health.

REPORT ON PROGRESS IN THE TREATMENT OF DISEASES OF THE THROAT.

BY F. I. KNIGHT, M. D.

TUBERCLE OF THE LARYNX AND LUNGS WITH CANCER OF THE STOMACH IN THE SAME PATIENT.

DR. SCHIFFERS¹ showed the larynx at the Medico-Chirurgical Society at Liège. The patient had suffered from pulmonary tuberculosis and from gastric troubles. The posterior third of the left vocal cord was swollen and immovable; the right cord also was paralyzed. At the post-mortem examination, besides the usual tubercular lesions in the lungs, a cancerous tumor was found in the stomach near the pylorus, causing such a narrowing of the orifice as hardly to admit the tip of the little finger. The mesenteric glands were swollen and often caseous. The larynx presented a large tuberculous cavity affecting principally the posterior part of the left vocal cord.

ANEURISM OF THE AORTA CAUSING BILATERAL PARALYSES OF THE VOCAL CORDS.²

The physical signs of aneurism were not well marked, but the laryngoscope showed complete paralysis of both abductors of the vocal cords. Tracheotomy was performed without relief to the dyspnoea. Autopsy showed an aneurism, as large as the fist, of the descending aorta, flattening out the left recurrent nerve, but the right nerve was at some distance, and apparently unaffected. The cardiac plexus, however, had been compressed between the trachea and aorta.

Two similar cases are recorded in the Pathological Society's Transactions by Drs. Baümeler and George Johnson,³ but in these cases there was no note of any pressure on the cardiac plexus.

ARREST OF ACUTE CORYZA.

According to Dr. Gentilhomme⁴ sulphate of atropia (from a quarter of a milligramme to one milligramme) given as a pill has an immediate effect on the first stage of coryza, often arresting the progress of the disease. It also produces great relief when the coryza is confirmed, but its action is less remarkable than at the

¹ Ann. de la Soc. Med. Chir. de Liège, June, 1882, and London Medical Record, October 15, 1882.

² Whipple, British Medical Journal, May 13, 1882.

³ Vols. xxiii. and xxiv.

⁴ Rev. Med. Française et Etrangère; London Medical Record, October 15, 1882.