THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XCIV.—THURSDAY, MARCH 9, 1876.—NO. 10.

CARIES OF THE CERVICAL VERTEBRÆ.¹

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CARIES of the cervical vertebræ is less frequent than that of the dorsal. It has, however, been my fortune to see several cases; the following is by far the most interesting, on account of its long duration, its apparently near approach to recovery, and its fatal termination.

The patient, three and a half years old when first seen, March 8, 1873, was placed under my care by Dr. E. H. Clarke. She had two brothers and one sister, all healthy except the younger brother, who had a very large head and had had convulsions. When about three or four months old she fell off the bed, but received no bruises. When about six months old she had diarrhœa, a purulent discharge from the ears, and three or four boils, being sick about four months; she then regained her strength and flesh. When she first began to walk, at about fourteen months of age, she held her head down and to the left side, the face not being turned to the left; later, the chin was allowed to drop on the chest; she would raise it for a short time and then drop it again. In the act of walking the left side was advanced slightly in front of the right. The patient walked strongly, and did not fall more than other children; she did not venture to climb like the others; there seemed to be timidity rather than weakness. When her hand was being washed, she drew it back as if she was hurt. She preferred to lie on her stomach; she made no complaint of pain, and did not seem to have headache. The discharge from the ears ceased before she began to walk.

When about two and a half years old she fell from a chair; soon after, in March, 1872, she seemed easily tired, was less inclined to walk, and preferred to lie on the bed. The inside of the right hand was noticed to be decidedly tender to touch, though not excessively so. Weakness of both arms and both legs slowly increased, till there was complete paralysis of the lower limbs, and almost complete paralysis of the upper. The legs were affected by spasms, becoming rigid; they were drawn up, and, if not supported, trembled when flexed. There

¹ Read before the Boston Society for Medical Improvement.

was no pain, nor tendency to rub or scratch any part as if in discomfort. There was strong resistance to any passive motion of the head, though it could be moved voluntarily.

When first seen the patient was lying on her back, not able to move her legs nor to turn over. The power of moving her upper extremities was very limited. Her hands were nearly useless; only very light and large objects could be held in one hand; most things were caught in a helpless way with both hands; small objects could not be held. The motions of the fore-arm and arm were nearly all retained, but were very weak.

Reflex action was exaggerated, both legs being forcibly drawn up on tickling the soles of the feet or on pinching the legs; she complained of pain when this was done. When the knee was bent and the foot was allowed to rest on the bed, the leg trembled very much unless it was supported. Sensation was preserved in both legs and arms, but to how great an extent could not be told, owing to the child's age. There was no tenderness over the spine. When the patient sat up it was necessary to support the back, which was much curved in the dorsal region; there was no other deformity in the spine. Her head fell forwards, and she complained of pain in her back; her respiration was then interfered with, seemingly from mechanical causes. The abdomen projected very much, the intestines being filled with gas.

The muscles of the legs responded to the faradic current, though somewhat sluggishly; the same was the case with those of the right arm; those of the left arm responded better. The bowels were rather costive, and the urine could not be retained long.

The child was taking iodide of sodium and cod-liver oil, and had had her neck painted with tincture of iodine. I ordered the iodide and oil to be continued, added phosphate of lime, and a blister one inch square to the back of the neck, to be repeated just below the first, after that had healed. An apparatus was applied which should keep the head nearly immovable.

Nearly three months after the child was first seen, it was recorded that she could move both legs at will in flexion and extension while lying on her back. Her father noticed that the return of power was gradual, and that at first the limbs were moved intermittently; at times they were paralyzed, at other times they could be moved. Improvement was slow but constant.

About the middle of July the patient was sitting in a high chair, and was pulled over by her brother. She fell on him, bruising her forehead. Next day her mother noticed a swelling on the left side of the neck, about as large as a pigeon's egg. When I first saw her there had been a swelling on the left side, seemingly an enlarged gland. The swelling increased in size, and in two weeks was about as large as a turkey's egg,

filling the space between the clavicle and the scapula, and extending up the neck not quite to the lower jaw. There was no pulsation; fluctuation could be perceived over the carotid, and a murmur, synchronous with the pulse, could be heard over its anterior edge. The circumference of the neck over the tumor was twelve and one half inches. There was a slight tenderness over the fifth and sixth cervical vertebrae, and slight deformity; the position of the child's head had changed, and become quite characteristic by its set stiffness.

August 1, 1873. Dr. Hodges saw the child, diagnosed the tumor to be pus from diseased vertebrae, and advised that it should be let alone for the present.

The next spring the child had whooping-cough, some of the paroxysms being very severe. When seen next, she could walk holding by her mother's hand, and could take a few steps alone. The swelling had increased in size, the neck measuring fourteen inches in circumference.

April 7, 1874. The swelling was slightly less in size, the neck being thirteen and one half inches in circumference; the abscess was slightly lobulated, was very movable, and seemed encysted; it resembled a fatty tumor. Dr. Hodges punctured it with the aspirator, and drew out about two ounces of pus. The abscess did not fill again, but the tract of the aspirator needle became fistulous.

May 25th. Dr. Hodges enlarged this opening and thoroughly evacuated the abscess; the contents were in large part concrete and cheesy. The cavity of the abscess filled up; it was firm and hard to touch, and gradually diminished in size.

November 4, 1874. Only a small, hard lump remained; the circumference of the neck was eleven inches. The child at that date walked firmly; her legs were well developed, the flesh was firm. Both legs were of the same size and length, but the motions of the right leg were a little less perfect than those of the left leg. The arms were not very strong, yet she could use her hands and fingers very well.

When I first saw the child I was chiefly interested in the diagnosis; my opinion was that there was caries of the fifth or sixth cervical vertebra. Paralysis of both legs in a child could be caused by disease of the spinal cord, of the base of the brain, or of both cerebral hemispheres; or it might be the result of so-called reflex paralysis, depending upon the disease of some other organ than the central nervous system. The diseases of the encephalon which might cause bilateral paralysis in a child are comparatively few; they must be either near the median line, as at the base, or multiple. Acute affections were excluded by the mode of origin and duration of the disease. There remain to be considered chronic hydrocephalus, multiple tumors or a single tumor at the base pressing upon both sides, and the possibility of some interstitial change, as sclerosis or granular degeneration, at the base.

Tubercular tumors are not infrequently multiple in children, and it is quite possible that bilateral paralysis might be caused by them. Yet the symptoms in such a case would differ essentially from those present in this case. The paralysis of the legs was complete, and greater than that of the arms, not the slightest voluntary motion being possible in the former. Such absolute loss of motion in the legs with the retention of so much power in the arms would scarcely be possible in case of tumors of the brain. Dr. West says the paralysis is often limited to the arm and hand, and invariably affects the upper more than the lower extremities. In cerebral tumors it is in the highest degree improbable that there should have been such entire freedom from all head symptoms. Such an absence of cerebral symptoms is of itself sufficient to exclude disease of the two hemispheres in cases of such absolute loss of control over the limbs.

The paralysis due to chronic hydrocephalus is accompanied with symptoms of cerebral disturbance which would scarcely admit of an error in diagnosis. In one case which I saw there were many symptoms resembling those of the present case ; but there were also convulsions, vomiting, headache, strabismus, amaurosis, deformity of the head.

An organic change in the neighborhood of the pons Varolii or medulla oblongata might give rise to paralysis. The discharge from the ears would add to the likelihood of this. It seemed to me that the cause of the symptoms was below these points. There had been no convulsions, no vomiting. None of the nerves arising from the medulla oblongata were affected ; the change in respiration seemed owing to mechanical obstruction rather than to loss of nervous influence, and there was no paralysis of the diaphragm. The only symptom present which could with certainty be referred to a higher origin than the fifth cervical nerve was the position of the head, inclined to one side and bent forward. This position of the head could be explained without supposing a lesion of the upper cervical nerves. For these reasons organic change situated so high seemed unlikely.

Again, the only changes likely to be met in so young a patient are abscess or tubercular disease. Tumors other than tubercular, and the more slowly developed consequences of a chronic interstitial change, are rare at so young an age.

As to so-called reflex paralysis, every organ seemed to be in perfect health, excepting the intestines. There was a great accumulation of gas in the intestines, with a proportionate distention of the abdomen, and constipation. But this condition arose subsequently to the other symptoms ; it was rather the effect of the paralysis than the cause. There was nothing abnormal about the urine. Reflex paralysis would not have presented the earlier symptoms, tenderness of the hands and peculiar carriage of the head. It is very unusual to have all the limbs affected in reflex paralysis.

Of paralysis due to disease of the spinal cord, infantile paralysis was excluded by the mode of origin, which in that disease is sudden and acute, and by the fact that all the muscles reacted to the faradic current.

Apart from infantile paralysis, I do not recall any instances of myelitis of spontaneous origin in so young a patient. Dujardin Beaumetz¹ does not mention a case, and of twenty-eight cases in which the age is noted, none are mentioned below the age of ten years; between ten and thirty years twenty cases were noticed; the remaining eight occurred between the ages of thirty and seventy. All the cases under ten years of age are mentioned as infantile paralysis.

The history of this case excluded acute myelitis or meningitis, primary or secondary, as the spinal symptoms were developed very gradually. When six months old the child had diarrhoea, boils, a discharge from the ears; she was sick four months at this time, but she seemed to recover fully, and subsequently walked until she was two and a half years old, after which the paralysis was noticed, and in about ten months became complete in the lower extremities. Paralysis of spinal origin follows acute diseases as a result from changes in the spinal cord secondary to the acute disease. These cases may be more or less acute, or may be chronic. It is, however, not at all likely that in such an instance the paralysis would first appear in a marked degree as late as two years subsequently to the acute disease. Moreover, the symptoms of tenderness of the hands and the peculiarities noticed in the position and motions of the head are not found in paralysis after acute diseases.

Paralysis due to chronic changes in the cord, such as are found in the adult, is almost unknown in childhood. A tumor pressing upon the cord is also little likely to occur at such an early age.

Spondylarthrosis is essentially a disease of childhood. E. Leyden² describes the symptoms of this disease remarkably well. One of the earliest signs is pain; not pain at the seat of the disease, but along the course of the nerves and at the periphery. This pain is felt in the course of those nerves which have their origin from the part of the cord affected.

Another early symptom is the readiness with which the patients become tired, "so that they cannot run about nor stand long at a time;" the gait becomes unsteady and peculiar, from the contraction of muscles to steady the diseased vertebrae. Motor disturbance increases until the most complete paralysis may follow.

A frequent and valuable symptom is increased reflex irritability. Later, the limbs may be contracted, the leg being flexed on the thigh and the thigh on the pelvis. These contractions can be passively overcome, if at all, only by causing pain to the patient.

¹ De la myélite aigue. Paris. 1872.

² Klinik der Rückenmarks-krankheiten.

On reviewing the present case it will be seen that there are no symptoms inconsistent with vertebral caries; but, on the contrary, they are fully explained by such a lesion.

Not to dwell too long upon the various symptoms, it may be mentioned that in the earlier stage the peculiar position of the head, avoidance of such free motions as are required in climbing, tenderness of the hands, preference for the unnatural position on the stomach, are valuable as showing that the first fall at four months of age caused injury from which recovery was not complete.

After the second fall, at two and a half years of age, the symptoms were more marked. It is necessary to briefly enumerate only: the child seemed more easily tired, preferred to lie on the bed, and was disinclined to walk; the inside of the right hand was decidedly tender; passive motion of the head was strongly resisted; the arms and legs became gradually weak until they were in the condition in which I found her. The legs were affected by spasms, the reflex action being exaggerated. There was no tenderness over the spine, and no deformity except the bulging of the back, when she sat up, from paralysis of the muscles which retain the vertebral column erect.

As the nerves were compressed by the inflamed tissue around the intervertebral foramina, they were irritated; hence the hyperæsthesia. In an adult, who could tell of changes in sensation, we should hear of other abnormal sensations at the periphery. The head could still be moved on the healthy joints, the diseased joints being kept immovable; but when an effort was made at passive motion the inflamed joints would be moved as well as the healthy, hence the resistance to passive motion.

When I saw her first, the lower part of the cord was virtually cut off from the brain at the point of disease; hence the exaggerated reflex action. There was sufficient irritation of the cord to produce contraction, or there was change in the lateral columns. As she subsequently so fully recovered, the latter is not probable.

My diagnosis, then, of vertebral caries is justified by an analysis of the symptoms. The locality of the disease was evidently in the cervical region. There was no interference with the respiration, except mechanically when the head fell forwards; the diaphragm acted well; none of the cranial nerves were affected; deglutition was normal. The tenderness of the hand in the earlier stage would indicate that the disease was at the point of exit of the brachial plexus, probably not higher than the middle of the cervical enlargement. As all the muscles of the upper extremities were partially paralyzed, it must be that when I saw the child the whole or nearly the whole of the brachial plexus was involved. I thought, therefore, that the disease began at the level of the fifth or sixth cervical vertebra.

It is interesting to notice that there was no pain on pressure over the

diseased bone, and no deformity at the time of my first visit. It is not to be expected that in the earlier stages of Pott's disease there should be deformity, for until the vertebrae yield there can be none. In the early stages, moreover, the disease, being in the bodies of the vertebrae, is removed from the influence of pressure upon the spinous processes. The arch of the vertebra being healthy, and a large part of the body still unaffected, the pressure is upon healthy parts, and the diseased portions have not become so degenerated as to receive painful impressions from steady pressure. It might be that percussion would cause an aching.

After I saw her, she steadily improved; I believe the improvement commenced before an apparatus was procured. Supposing the pus from the diseased vertebrae pressed upon the cord, and hence caused the paralysis, when exit was obtained for the accumulation this pressure would be relieved. It was not until the pus had found its way into the loose tissues at the side of the neck that tenderness was noticed over the spine, and, about the same time, deformity. Then the bodies of the vertebrae yielded; yet the power of motion in the limbs steadily improved, showing that deformity of the vertebral column was not the cause of the paralysis. The paroxysms of the whooping-cough caused the tumor in the neck to increase quite rapidly in size; at the same time the motor power of the legs rapidly improved. It would seem as though the effort of coughing aided in expelling the pus.

I have spoken of compression of the cord from accumulation of pus in the vertebral canal. Of course I mean between the bone and the periosteal layer of the dura mater. This is only a supposition; compression is not always present in vertebral caries. From the nearly complete recovery, the commencement of which was followed by the appearance of pus at the side of the neck, it is probable that in this case some of the symptoms were due to compression by the pus; but generally these are caused by the irritation of morbid products or by inflammatory and other nutritive changes.

The amount of such change is not in proportion to the amount of compression. I believe there is no means of judging, clinically, as to how great the compression has been. We can conclude from the course of the symptoms only whether the progress of the secondary changes is rapid or slow.

The pus which found its way into the neck became encysted, and seemed to be cut off from the source of supply in the vertebrae. At the autopsy, no connection was found between the vertebrae and the seat of the abscess. Indeed, the results of the operation showed that the connection had been closed by nature. In view of this fact, and considering the subsequent recovery of motion and of strength, and the development of the legs and arms, it was reasonable to suppose that the disease had ceased to advance, and I confidently expected complete recovery.

In regard to the place at which the pus pointed. I have seen one other case similar to this. Leyden¹ describes the course taken by the pus. He says that in disease of the cervical region, as a rule, it passes down behind the longus colli muscles and appears at the posterior wall of the pharynx. In other cases, it sinks more to the lateral portion of the neck, and comes out at the sterno-mastoid above the clavicle, or finally, following the course of the brachial plexus, points in the axilla. The pus from the lower cervical and upper dorsal vertebrae has generally the longest course to follow. As the longitudinal ligament is thickened it presents an obstacle to the passage of the pus into the thoracic or abdominal cavities, and so it slowly settles down and appears under Poupart's ligament, having followed the femoral vessels.

The further history of my case is as follows.

In April, 1875, the patient had measles, with others of the family. The eruption was pretty well developed. She was under the care of a homœopath during this sickness. From her father I learned that the symptoms were mild until the eruption was fading from the face. Then there was pain in the head, alternating with pain in the stomach, and a condition of half stupor. The prominent symptoms were cries as if from pain, moaning, a tendency to sleep, pulse 130 to 136, respiration 58, slight spasm in the left hand, dilated pupils, flushed face. About the last of April the left arm was contracted, the right arm seemingly paralyzed; there was no motor disturbance of legs. There was much timidity, and the child would call out nervously to be laid lower or higher.

May 10, 1875. I found her in bed on her back, both arms drawn up about equally, the fingers of left hand used in rubbing her face, those of right hand not used. The pupils were both large, the iris responded feebly to light. Any motion of the head and coughing caused her to cry out. The left leg was drawn up, but could be easily straightened. There was no exaggerated reflex action on tickling the legs, but she cried out as if in pain. There was slight strabismus, which the father said had been more marked. Pulse 138. Respiration 27.

She remained very nearly in the same condition, temporarily improving, though finally becoming rather worse, her condition varying slightly from day to day. The cough was the most distressing symptom, because by its convulsive jar pain was caused. There was frequent vomiting.

During the early part of June she had attacks of vomiting; she cried out, became delirious, and rolled her eyes about. These attacks recurred regularly every fourth day. As she had been with the rest of the family in a part of the country where intermittent fever prevailed,

¹ Klinik der Rückenmarks-krankheiten, i. 224. See also Otto Soltmann, Ausbreitungsbezirke der congestions Abscesse, Jahrbuch der Kinderheilkunde, 1874, page 267.

and as other members of the family had had chills and fever, I prescribed quinine. Twenty to thirty-six grains given the day before the expected attack modified it, but did not prevent its occurrence. In some of the attacks the face was drawn to the right, and between the attacks there was paralysis of the right side of the face.

June 12th. Dr. E. H. Clarke saw her in consultation, and advised to continue the quinine, and to increase the dose of iodide of sodium until ten grains were taken three times a day. The attacks of vomiting, with unconsciousness, continued to recur, though less severe than at first.

June 25th. Bromide of potassium was given, beginning with six grains three times a day, and rapidly increased to twelve grains. Subsequently the dose was reduced to ten grains, and then to eight. Soon after this, the vomiting ceased.

During the latter part of June the arms and legs became relaxed, and until death there was complete paralysis without contraction of all the extremities, and only the very slightest trembling on tickling the feet during the earlier months of that time, with occasional spontaneous twitching of the legs.

In the middle of July bed-sores formed ; several began as blisters, then the cuticle came off and a slough was seen at the base. These formed on parts which were exposed to pressure for a short time only, or even where there seemed to have been no pressure. The nursing was admirable, and none of the bed-sores attained any large size. As fast, however, as one healed others formed. Towards the end of life there was an unnatural growth of hair on the limbs and on the labia.

Shortly after the middle of August she had attacks differing from previous ones, recurring at varying intervals. She exclaimed first, "Oh ! oh ! oh !" then there was profuse sweating, confined to the face and neck ; after that the face and neck became mottled with red, resembling scarlatina eruption. There was no increase of drowsiness, nor any vomiting. Bathing the head with cold water seemed to cut these attacks short.

During the second week in September there was much dyspnoea, with coarse râles in the throat, and a pulse so rapid that it could not be counted. Respiration, 50 to 66. The father thought she had taken cold. More stimulants were used. In about two weeks the child's condition was nearly the same as previous to this attack, and did not vary materially until death. About a week before she died there was a spasm of the facial muscles, and in the night in which she died the same was noticed again. Respiration was chiefly abdominal after the early part of July.

On October 10th the actual cautery was applied to the neck over the diseased vertebrae. After this the child seemed brighter, and the bed-sores healed rather more quickly. That, however, may have been in

consequence of quinine, which was given again in doses of two and three grains.

During the summer and fall, excepting when she had the attacks mentioned above, her intelligence was good. While taking large doses of bromide she was rather apathetic; but after the attack of dyspnoea in September she was very intelligent, noticed what was done in the room, responded to noises made in the house, and noticed what was said by her brothers and sister in the entry. She also repeated poetry she had learned previously.

The bowels were sluggish during most of the time, with only one or two periods of looseness. The urine was passed frequently, seemingly with pain; there was no accumulation in the bladder. For a while there was a rich deposit of urates and phosphates; they collected on the cloths and on the surface of the legs and genitals. I was in doubt as to how much of this might be due to the diet, which at that time was largely composed of beef-tea. The food was changed, more water was given to drink, and there was soon a change for the better.

December 20, 1875, she died. An autopsy was made about nine hours after death. There was great emaciation. Large parts of both lungs were collapsed, containing no air; portions cut from these parts sank in water. The kidneys, intestines, stomach, and liver seemed healthy. The heart was not examined.

On either side of the vertebral column in front was a small sac containing caseous pus, each about an inch and a half long and about three fourths of an inch wide, hanging down from the fifth or sixth cervical vertebra. At their upper limit these two sacs were united by a bridge of pus about half an inch wide, which took the place of the bodies of one or more degenerated vertebrae. There was considerable deformity of the vertebral column in the lower cervical region, the arches of the fourth and fifth cervical vertebrae falling forward. The arches of the fourth, fifth, sixth, and seventh cervical and of the first and second dorsal vertebrae were ankylosed one with the other. The bodies of the vertebrae were sawed through on the median line, and the laminae were sawed just to the left of the spinous processes. On the left half the body of the third cervical vertebra was found to be much diseased, but clearly discernible; the intervertebral cartilage between the third and fourth vertebrae could also be seen. The bodies and cartilages of the fourth, fifth, sixth, and seventh cervical and of the first and second dorsal vertebrae could not be distinguished, and about half the body of the third dorsal was destroyed. The intervertebral foramina between the fourth and fifth, the fifth and sixth, and the sixth and seventh cervical vertebrae were united into one cloaca by the destruction of the pedicles of the respective vertebrae. The transverse processes of all the vertebrae were present. There was no bone between the transverse process of

the sixth and seventh cervical vertebrae and the collection of pus. On the right the condition of the bodies was the same as in the left half. A few small loose pieces of bone remained embedded in the thickened pus. The transverse processes were all present, but those of the sixth and seventh cervical vertebrae were imperfect. The pedicles of the sixth and seventh vertebrae were represented only by pieces of bone disconnected with the rest of the vertebrae. The greatest amount of disease was at the level of the sixth and seventh cervical vertebrae. The bodies and pedicles of these two vertebrae had entirely disappeared; also the articulating process of the sixth with the fifth could not be clearly recognized on the right: it was at least in part diseased. This extensive destruction allowed the fifth vertebra to slide forwards. On the left, the articulating processes from the fourth cervical to the second dorsal vertebra were ankylosed. On the right, probably those of the fourth and fifth cervical vertebrae were ankylosed; also those of the seventh cervical and the first and second dorsal. The fifth cervical nerve was comparatively free, the intervertebral foramina through which the sixth and seventh cervical nerves passed were very much narrowed, and it would seem that those nerves must have been compressed. The first and second ribs were crowded together.

The canal was somewhat narrowed opposite the fifth cervical vertebra by the projection forward of the posterior portion of its arch.

The spinal cord was decidedly swollen in the region of the lumbar enlargement, and somewhat so above. It completely filled the vertebral canal at the level of the diseased vertebrae. At the level of the atlas, where divided, it was unusually firm, but to the naked eye showed no special change. The dura mater was firmly adherent to the pia mater throughout. In the dorsal region was a cavity occupying the locality of the central canal, and about one third the diameter of the cord. This cavity extended into the cervical enlargement, but not above; was not noticed in the lumbar enlargement. The cord below the cervical enlargement was abnormally soft. On examination in the fresh state, no nerve-fibres could be found in either the cervical or the lumbar enlargements.

Owing to lack of time the head was not examined.

No pus was found outside the two sacs above mentioned by the sides of the vertebral column.

There was no fatty nor granular change of the muscular fibres from the rectus femoris. The fibres were very narrow, most of them striated; many did not show transverse striæ, only longitudinal. There was no multiplication of nuclei in the sarcolemma.

Of the symptoms present after the measles, and subsequent to the acute attack of cerebral disturbance, nearly all can be explained by the disease in the cord. There were only a few distinctly marked head

symptoms. The paralysis of one side of the face was the most clearly defined of these. There were also sometimes delirium and unconsciousness. The strabismus might be called a cerebral symptom, but it is often reflex in children, and Dr. Charles S. Bull¹ mentions that he has seen strabismus in two cases of vertebral caries. As it was not constant in the present case, and at no time was very severe, it could not have been due to a permanent lesion of the sixth nerve.

The dilated pupils, sweating, flushed face, and rapid pulse were undoubtedly dependent upon lesion of the sympathetic. The vomiting might have been dependent upon irritation of the phrenic or of the sympathetic. The attacks which recurred every fourth day I considered at first to be intermittent in nature, but finding that quinine did not prevent them, I thought they might be epileptiform, and so gave the bromide of potassium, with benefit.

The spinal symptoms during the latter part of life were caused by meningitis and myelitis, not by compression. At first there was pain and contraction; later, when the conducting power of the cord was destroyed, entire loss of all motion, active or reflex.

GYNÆCOLOGICAL NOTES.

BY F. K. BAILEY, M. D., OF KNOXVILLE, TENN.

CASE I. *Imperforate Hymen*. — A girl of sanguine nervous temperament, fourteen years of age; large and stout, and of a good constitution. Had been in the vicinity a few months only, and it was ascertained that, although every month there had been symptoms of menstruation, yet "nothing had been seen." When summoned, I found the girl in intense agony, the pain referred to the pelvic regions and attended with bearing down efforts. Suspecting the cause, I made an ocular examination, and found, on separating the labia, a fluctuating tumor occupying the vaginal ostium. With the assistance of a medical gentleman who was called in to give his opinion, an opening was made in the middle line with a bistoury; there gushed out with considerable force, in a full stream, nearly a quart of a dark brown, almost inodorous fluid. The pain was relieved immediately.

Dark coagula continued to escape for several hours. A lotion of carbolized water was ordered, to be used freely, and at the end of five days there was still some discharge. At the close of another week, all discharge had ceased, and no further trouble was complained of.

In a month from the time of the operation, menstruation occurred normally, and no subsequent obstacle has presented.

The friends had noticed a slight enlargement of the lower abdomen

¹ American Journal of the Medical Sciences, July, 1875, page 60.