Klin. Med., 1884) and Münzer's cases (*Wien. Klin. Woch.*, 1892), are cited as examples of this disease. Rothman believes that these cases belong to the last group, being in the early stages of the disease; 5, combined sclerosis of the lateral and posterior tracts in progressive paralysis; 6, a group which he has termed "primary combined column disease," having collected twenty-seven illustrative cases. His conclusions from the study of these are: 1, that primary combined system disease must be considered a disease by itself; 2, that clinically it is distinguished by symptoms pointing to the disease of the posterior and lateral tracts; 3, that the patellar reflexes remain either present until death or disappear in the last stages of the disease; 4, that the pupillary reaction is in almost all the cases present; 5, that usually the process first attacks the lower extremities and extends later to the upper extremities; 6, that the disease runs a moderately rapid course, extending not over three years. In the spinal cord there is degeneration of the posterior tracts, the posterior roots remaining almost always free; there is a moderate involvement of the posterior root zones and crossed pyramidal, and usually also of the direct pyramidal and direct cerebellar tracts. An irregular slight degeneration of the remaining parts of the anterior lateral tracts was present. In a great number of cases there is disease of the gray substance. The cause of the process is best found in the primary affection of the gray substance. Concussion and pernicious anemia are particularly to be thought of in the etiology, while syphilis seldom plays any part. The cases of old tabes with degeneration of the lateral tracts in the last stages and of spastic paralysis with degeneration of the crossed pyramidal tracts and secondary inflammation of the columns of Goll and the direct cerebellar tracts, are to be differentiated from this disease.

Leyden (*Zeitsch. f. klin. Med.*, 1892, p. 23) has divided chronic disease of the spinal cord as follows: 1, chronic myelitis with sclerosis of the spinal cord: *a*, circumscribed form; *b*, disseminated form; *c*, diffuse form; 2, systemic disease: *a*, tabes dorsalis; *b*, the spinal form of progressive muscular atrophy and bulbar paralysis (type-Aran-Duchenne); 3, Friedreich's disease; and 4, syringomyelia.

We are inclined to believe that the cases diagnosed as chronic myelitis are often, if not always, examples of combined system disease, as Oppenheim¹² claimed. It was his belief that many of the cases reported as myelitis by Leyden must now be considered as cases of combined sclerosis.

The change in the spinal cord in our case, demonstrated by the carmin sections, showed enormous involvement everywhere of the blood vessels, especially in the gray matter. It will be remembered that the blood vessel walls were thickened; in some the lumen was obliterated, and in places there were numerous capillaries of recent formation. There was also some round-celled infiltration in the membrane and gray matter, though this was not very marked. In many places the appearance suggested an inflammatory change. There was, besides degeneration of the nerve tissue, increase in the connective tissue. We believe the process was vascular in origin, thus agreeing with the opinion of Ballet, Minor and Marie, and contrary to the opinion of Rothman, who argued that the primary seat of the disease was in the ganglion cells of the anterior horns. The process

seems to be a rapid one. According to Rothman, the duration of the disease is never over three years. In the case reported in the *Journal of Nervous and Mental Diseases*, above referred to, the patient died three years after the onset of the disease, and in the present case the duration was a little over two years.

The possibility occurs to us that the cases collected by Rothman, those described by Gowers¹³ as ataxic paraplegia; a small group of cases reported by Westphal, Reymond, Popoff and Strümpell in which first the lateral and secondly the posterior columns appeared involved, belong to the same class of spinal degeneration. On the other hand, Gowers claims that both the nerve elements and interstitial tissue may be involved, and that when the process extends beyond the tracts especially diseased, and symptoms such as girdle pains and loss of sensation are present, the cases should be classed as examples of chronic myelitis.

GASTROSTOMY—PRESENTATION OF ILLUSTRATIVE CASE.

Read before the Illinois State Medical Society, held at East St. Louis,
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NEOGA, ILL.

Mrs. R. E., 20 years of age, in August, 1895, swallowed an indefinite quantity of a solution of potassium hydrate, commonly known as concentrated lye, of uncertain strength. Whether any of the chemical reached the stomach is not known, but its escharotic effect was markedly exerted in the esophagus. I did not see the case for some weeks after the accident and am unable to say what, if any, constitutional effects the drug produced. The attending physician treated the case by quieting pain, giving demulcent drinks and liquid food. No attempt was made to preserve the lumen of the esophagus by the systematic passage of bougies during the time cicatricial contraction was taking place. While such a procedure is advocated in many of our text-books it is of doubtful utility; for gradually and persistently stenosis and atresia succeed each other.

In December, 1895 the case was referred to me, as one of stenosis of the esophagus with threatened starvation. What would be more natural than to attempt the passage of an esophageal dilator. I could pass it no further than ten inches below the edge of the superior incisor teeth. I tried bougies and tubes of different caliber and rigidity without avail, as we sometimes do in urethral stricture. I tried the insertion of two instruments at the same time, thinking one might occupy a false pocket, thus giving direction to the other through the stricture. Foiled in this I used some degree of force with the instrument. I had no way of measuring the degree of pressure, simply trusting to touch and judgment; but in traumatic contraction of the esophagus the walls of the organ are greatly thickened and there is much less liability of rupturing it than in cancerous contraction, the most common form of stricture in this locality. The close relation of the esophagus with important organs would make perforation of its walls an extremely dangerous accident. I despaired in opening the canal, and had I succeeded in passing a bougie, it is very doubtful if dilatation would have accomplished any permanent benefit.

¹² Oppenheim: *Berliner Klin. Wochens.*, 1891, p. 761.

¹³ Gowers: *Diseases of the Nervous System*, 1892.

My patient was rapidly starving. I explained gastrostomy to her. This operation was first performed by Sédillot forty-eight years ago, but the first success was scored by Sidney Jones, of England, as late as 1874. My patient submitted to operation in January 1896.

In cases of this kind, where stenosis is due to an escharotic, an operation, if not a duty, is much more commendable than in cancerous stricture, and even in malignant contraction I believe the operation should be done.

I performed gastrostomy by the method known as Von Hacker's, by some authors credited to Howse. This method consists of making the opening in the abdominal wall at a point about three inches below the ensiform cartilage and a little to the left of the median line. The incision in the skin was two and a half inches and that through the peritoneum one and a half inches long and almost vertical in direction.

The two principal reasons for selecting this point for the opening, are its relation to the stomach and that we may go through the body of the rectus abdominis muscle, hoping to utilize the muscular fibers of this body as a sphincter to our artificial os. In my case I was compelled to go a little lower than desirable on account of the liver and a transverse tendinous intersection in the muscle that would have afforded very few muscular fibers.

The transverse colon first presented, this was pushed down, the stomach was seized with forceps, drawn into the wound in such a manner as to avoid tension at the cardiac and pyloric ends. It was found very clean and empty and somewhat contracted. A hairlip pin was passed through the upper fold of the organ both to hold it and serve as a guide in making the gastric incision a day or two later. This pin is a very valuable part of the operation for the reason that in a few hours the wall of the stomach and the whole bottom of the wound lose all their former appearance, only showing a mass of lymph and other inflammatory products that are very confusing. The peritoneal surfaces of the stomach and abdominal wall were sewn together with a continuous silk suture. I consider this a mistake as it is next to impossible to remove the thread a few days later, so completely is it buried and held by the exuded lymph. An interrupted suture with long free ends or an absorbable animal suture would be greatly preferable.

The suture was passed through only the serous and muscular coats of the stomach and an area of the sac about the size of the thumb nail left exposed. The opening into the stomach was made three days after the primary operation. This is easily and painlessly done by first dropping a few minims of a solution of cocain into the bottom of the wound and then, in about five minutes, with an ordinary cataract knife cutting out the hairlip pin which was previously passed entirely through the wall of the stomach. Deferring the secondary operation was for the purpose of admitting of the formation of inflammatory adhesions between the stomach and abdominal wall at the seat of the operation, thus isolating the gastric opening from the general peritoneal cavity and preventing leakage into the latter. Statistics show that the operation in two steps, thirty-six to seventy-two hours apart, is a great advantage in avoiding peritonitis and death. The patient's recovery was uneventful. There was no elevation of temperature during convalescence.

Our first method of introducing food into the stomach was by the introduction into the fistula of a soft catheter. To the patient this method of feeding was very unsatisfactory on account of the pain produced when inserting the instrument. She insisted that the tube be left in the opening from one feeding to another; and being a person of strong will she had much her own way about it.

I then had made for her a tube of sterling silver about an inch long and three-eighths of an inch in diameter with a retaining flange on one end and a cap or lid on the other. This tube was inserted and retained by the flange on the other end and elastic belt.

I have tried many times to open the esophagus, both from below through the gastric fistula and from above, but have long since ceased my attempts, as we now have a complete atresia of the esophagus under the middle of the sternum, not a drop of fluid having passed through the esophagus for sixteen months. With an ordinary bicycle pump we constructed a good strong syringe and with this she forces custards, mashed potatoes, crushed fruits, etc., into the stomach and keeps herself nourished well enough to be able to suckle a robust baby, to which she gave birth about eleven months after the operation. The patient goes about her household duties and shopping much as she did prior to the injury.

I can not defend leaving the tube permanently in the opening with any good reason, except that the patient demands it. I am perfectly aware that the instrument is liable to cause atrophy of the tissues in juxtaposition to it, and possibly an ulceration of the stomach; but as there are two parties concerned in the matter so are there two opinions to be respected.

Thus far there has been very little leakage of the gastric juice and very little irritation of the margins of the opening. If there were soreness alkaline washes and stable unguents would be in order.

I believe if I had another case to operate upon I would adopt a different method. While this has so far been practically a success, theoretically we reason that a valve method, such for example as practiced by Albert, would be better. Yet in cases where we hope to subsequently do retrograde dilatation, the mode selected in this case is no doubt the best.

I have been very anxious that my patient masticate her food and economize the saliva, but in the last year she has practically had no saliva in the stomach. Chewing the food causes a distressing spasm of the pharyngeal muscles and she absolutely refuses to try mastication. To check the secretion of saliva she has constantly taken belladonna. The size of the dose does not need to be increased. She has consumed about a pound of the fluid extract within the last year. Our text-books teach that an absence of saliva in the process of digestion and nutrition can not long be endured. So far my case does not verify this statement, yet I have apprehensions of trouble in the future.

NOTE.—April 5, 1898.—There has been no material change in the case since this report was given.

The Watch-Spring and the Gigli Wire Saw.—Watch-springs have an eye in the outer end, and their extreme flexibility, without lateral motion, adapts them ideally for a carrier of the wire saw, Lauenstein asserts in the *Cbl. f. Chir.*, February 26; *vide JOURNAL*, March 5, page 558.