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CLINICAL LECTURE ON A CASE OF FACIAL PARALYSIS.

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SOME of the most striking points in the case of the young man before you are obvious at the first glance. The left side of the forehead is smooth, while the right is wrinkled, and the distinction becomes more marked when the patient is requested to raise his eyebrows. He cannot close the left eye, though there is much improvement in this respect since you first saw him, a week ago. The corner of the mouth is lower upon the left side, and the whole mouth is drawn to the right. He cannot whistle. Upon examining the throat we find the arch of the palate alike, or nearly so, upon the two sides, but the uvula is strongly curved, with its point toward the healthy side.

The muscles implicated are all supplied by the facial nerve, and their condition shows that the nerve is paralyzed. To get at a complete diagnosis, however, we must inquire whether this is the only nerve affected.

The first pair (olfactory) shows its integrity by his recognition of camphor and peppermint, the right nostril being closed. The second (optic), which is a very important nerve in the study of the condition of the brain, is accessible to direct examination at its outer end, namely, in the optic disk. The ophthalmoscope shows in this case no inflammation of the nerve or disturbance of its circulation.

The motions of the eye are perfect, except that upon the paralyzed side its outward excursion is slightly limited. There is no double vision, no dilatation of the left pupil, and no ptosis, whence we infer integrity of the third (oculo-motor) and fourth (patheticus), with a slight paresis of the sixth, or abducens.

As to the fifth, which, by the way, is quite likely to be involved in the affection which I suppose this to be, we have a history of pain upon the top and whole left side of the head, dating back several weeks previous to the facial paralysis. This still persists, especially in the occipital region, though much less at present. Sensation in the left side of the face is but slightly lessened, although the patient speaks of a numb feeling. Its motor portion is unaffected, as you will perceive by making

him close his jaws firmly and feeling with your fingers the equal contractions of the masseters and temporals upon the two sides.

The auditory nerve, which from its close anatomical relations to the facial we should expect to show some change of function, is unaffected save to the extent of some ringing in the ear. There is no deafness. Dr. Green finds no visible change in the ear connected with the present trouble. The pneumogastric is, so far as we can observe, unaffected, the pulse and respiration being normal.

The tongue is at times protruded slightly toward the paralyzed side, but the deviation is so slight and so inconstant that I hesitate to attribute to it the meaning which it would have if well marked, namely, paralysis of the hypoglossal. In judging of the position of the tongue it should be referred to the median line of the face, and not to the mouth, since from the distortion of the latter a deviation might be supposed to exist when in reality the tongue was exactly straight. So much for the cranial nerves.

Now, if you ask the patient to grasp your hand with his own, you find that the left is much the less powerful of the two, which is not due to a natural difference, since he is in the habit of using his left hand for his work. You notice, however, that there is no impairment of the motions of the hand, which he is able to direct as well as ever. It is simply weaker.

He states that there is no difference between the motion of the two legs, and nothing is noticeable in his gait. He speaks, however, of a numb feeling in the left leg as well as in the corresponding arm. Having made out these points, where shall we locate the lesion?

You notice that we have had to deal with a very complete paralysis of the facial, the orbicularis palpebrarum in particular having been, when you first saw him, almost motionless. Experience has shown that such a paralysis is seldom, some authorities have even said never, connected with a lesion of the higher motor centres, but that the nucleus or more usually some part of the trunk of the facial is the point where the communication is cut off.

A similar limitation is also indicated by the fact, for which I must ask you to take my word, that the paralyzed muscles entirely failed, more than a week ago, to respond to a faradaic current of sufficient intensity to cause contraction of the corresponding muscles upon the other side and the cervical muscles upon the same side. To-day, as you see, the response is decided. The galvanic current has caused, from the first time I used it, — which was not, however, until two or three days after the failure of the faradaic, — a contraction of the muscles elevating the angle of the mouth. This distinction is not observed in paralysis of cerebral origin, where the nerve retains its irritability for a long time.

In the other direction we find that the lesion must be above the gan-

gliform enlargement, since the azygos uvulæ, which we have seen very distinctly paralyzed, is controlled by a branch arising at this point.

A lesion of the nucleus itself of the facial within the medulla oblongata, and nearly limited to it, would account, it is true, for the symptoms on the part of this nerve; but such a lesion is so rare, and the chances of its being so strictly limited, and especially of its not producing *crossed paralysis*, that is, paralysis of the limbs on the other side, are so exceedingly small, that we may leave it out of the account. A lesion of the pons higher up and on the other side might give rise to symptoms similar to those observed here, and we can hardly exclude such a lesion with certainty. The improbability, however, of such complete paralysis of the facial affecting so little except this nerve is great, and I shall accordingly neglect this hypothesis and assume that the nervous current from the motor centre to the facial muscles is interrupted above the gangliform enlargement, but outside of the brain. Such a facial paralysis as we see in this case is frequently due to the local action of cold upon the side of the face, and this, indeed, is the diagnosis which would naturally be made here at first sight. I do not admit it, however, for the following reasons:

(1.) Want of history of any special exposure. The paralysis, if I am correctly informed, developed gradually. This of itself, however, would have but little value.

(2.) The paralysis of the left azygos uvulæ, pointing to a lesion within the Fallopian canal. This *may* happen if a rheumatic inflammation affects the sheath of the facial and compresses it in its narrow course, but is not a frequent accompaniment of this form, which usually affects only the branches of the facial *after* their exit from the skull.

(3.) The affection of other nerves, especially of the fifth. Rheumatic paralysis of the facial, especially of the severer kind, such as may be supposed to arise from an inflammation in the region just mentioned, is often preceded by pain in the side of the head and noises in the ear, but is usually of rapid origin, occupying in its development at most but a few days and usually a few hours. In the present case, however, the neuralgic preceded the paralytic symptoms by several weeks.

We have, beside, the paresis of the sixth pair and of the hand.

It is, of course, possible that we are dealing with coincidences, that the paralysis succeeded the neuralgia in time, but bore no relation of effect to cause. It seems more philosophical, however, to assume a common cause, as the probabilities against the coincidence of so many affections, including the paresis of the arm and other cranial nerves, must be very great. This view is confirmed by the progress of the case, which shows improvement both as to decrease of pain and as to increase of motion.

Disease of the middle ear is excluded by the results of direct examination.

Lead paralysis, which in this form would be exceedingly anomalous, but which was thought of from the occupation of the patient (house painter), is excluded by the absence of the blue line from the gums and of lead from the urine, which Dr. Wood was kind enough to examine for me.

The presence of optic neuritis, especially if double, would point very distinctly to the existence of some gross lesion at the base of the brain, and would be very likely to occur if the present case continued to develop new symptoms. Its absence, on the other hand, is of less value as a symptom.

In view, therefore, of the relative frequency of the affections and of the patient's age and possible history, I am led to the diagnosis of a syphilitic growth, probably connected with the dura mater, involving slightly the fifth, sixth, and auditory nerves, while the facial has been almost completely paralyzed, possibly from its sheath being swollen within the canal of Fallopius. With this diagnosis you will perhaps ask me, Why does the auditory, which is so closely connected with the facial from its origin to its entrance into the temporal bone, so nearly escape, and whence the paresis of the brachial plexus? To the first question I can only answer, I do not know, unless because it has a much less dense fibrous sheath, and is consequently less liable, although surrounded by the same morbid product, to take on a syphilitic neuritis. As a matter of observation, facial paralysis is the second most common form of paralysis from syphilis. The first is that of the oculo-motor.

As to the second question, I have the following theory to propose. An ordinary paralysis involving the motor fibres extending between the corpus striatum and spinal cord, and depending upon a lesion situated at the nucleus of the facial, would be a *crossed* one, since these fibres do not decussate for some distance lower down, just below the olivary bodies, and consequently those which, at the level of the facial nucleus, are upon the left side of the medulla, are destined to the right side of the body. If the lesion were entirely outside the brain these fibres would hardly be affected at all, or, if they were, the same crossed effect would take place.

There is, however, a form of paralysis sometimes connected with lesions at this point, and occurring upon the same side with them. It is found when the cerebellum is diseased. You have perhaps heard the theory of Luys, which is, in short, that the cerebellum is a sort of relay battery, a reservoir of motor force to be drawn upon by the voluntary motor fibres which are thereby reinforced. When this supply of reserve force is cut off we have, consequently, not an impairment of motion in the way of variety and extent, since the voluntary fibres are still intact, but simply of diminished strength; and this is what we observe in the case before us, as you have already seen. The patient has perfect control

over the movements of the arms, but they are distinctly weaker. You may, it should be said, in many cases when the disease is well marked, have decided tremor and convulsive movements upon the same side with the lesion.

I must, therefore, add to my diagnosis that there is some pressure upon the cerebellum, or its peduncle upon the left side.

How does the history of the case agree with the diagnosis of the nature of the lesion?

I am sorry to say it is not satisfactory. We may have nerve lesions occurring at various stages of syphilis, and among them one of the most common and also one of the earliest is that which we have before us. It has been observed coincidently with the outbreak of syphilitic erythema or of a papular eruption. Usually, however, it is later. When it occurs late in the disease as a tertiary symptom, it is more likely to be due to gummous formations in the brain or in the membranes at its base, and the prognosis is more unfavorable. What the pathological anatomy of the *early* paralysis is, I am unable to say; perhaps a subacute localized inflammation of the neurilemma. This man has a chancre, which has but recently healed under the use of a mild astringent wash; he has enlarged glands in the groin, some five weeks older than the paralysis, and one enlarged gland behind the left ear. His hair has come out; he has had a mild sore throat. This chancre antedates his paralysis, according to his statement, by only three weeks, which as you see, would entirely preclude the possibility of the neuralgic pains being connected therewith, as they begun four or five weeks ago. So that we can hardly suppose this sore, unless of older date than he supposes, to have been the primary lesion of his present disease. He acknowledges several gonorrhœas, and it is of course under these circumstances not impossible that either this sore is older than he thinks, which seems to me the more probable in view of the enlarged inguinal glands, or that some other may have existed. He says himself, with some emphasis upon the last clause, that he "never had any other that he knows of."

These nervous symptoms may come on without any history of cutaneous affection.

I cannot very well help being a little shaken in my diagnosis by this absence of a sufficiently ancient syphilitic history, though I still adhere to it as the most probable.

Fortunately, however, for our patient, the treatment adapted to this diagnosis is so little harmful, although unnecessary, in case the lesion should be of rheumatic origin, that I have no hesitation in putting it in force. It can do harm only by inducing us to neglect more appropriate measures, and this I do not intend shall happen.

The patient is therefore now taking ten grains of iodide of potassium three times a day. He will soon have fifteen or more, and if

improvement is too slow in taking place I shall add a small amount of the bichloride of mercury to each dose. The faradaic current will be applied every day to the affected nerves and muscles of the face, if it produces contractions as you saw it do; if not, the galvanic will be used.

I think we may make a favorable prognosis in the case from the absence of strongly-marked constitutional infection, from the early appearance of paralysis, and from the improvement which has already taken place, both in the sensitiveness to the electric current and also in his power of voluntary motion, which, though slight, is very evident and increasing.

UMBILICAL HERNIA WITH CYST OF THE BROAD LIGAMENT.

BY WALTER BURNHAM, M. D.

Mrs. S., Orleans County, Vt., consulted me in 1857 on account of an umbilical hernia of twenty years' duration, produced during labor with her second child. She was forty-five years of age and very corpulent. On examination I found an umbilical hernia about the size of a quart bowl, composed of omentum, intestine, and bands of fibrous divisions, which could be seen and felt extending across the sac in various directions. These bands allowed omentum or loops of intestine to crowd through their interstices over the whole surface of the hernia, while they so constricted the sac as to virtually produce so many separate ruptures, each, independently of the others, liable to strangulation.

At different periods during the preceding four years the tumor had become irritated by friction of the clothing, until quite severe inflammation had ensued, involving not only the skin, but also the entire structure of the hernia, and closely consolidating the whole mass by adhesions.

Subsequently an attack of inflammation more severe than any of those preceding was followed by suppuration with sloughing of portions of the integument, cellular tissue, and incarcerated omentum, and threatened strangulation of two loops of intestine. The inflammation, however, quickly subsided, and averted this danger for the time, though it soon recurred with the formation of a second abscess.

In this condition of things it seemed to me that some prompt action was required, and I accordingly advised the reduction of the hernia by dividing those radiating or cross bands through the sac, so as to liberate the incarcerated folds of the bowel.

The patient having been anæsthetized with chloroform, I made, carefully, an incision through the integument, where this was the only hernial covering, and extended it in the various directions required to