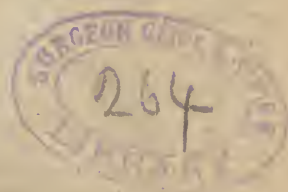


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ORIGINAL COMMUNICATIONS.

THE RATE OF GROWTH OF THE NAILS AS A MEANS OF DIAGNOSING CERTAIN FORMS OF PARALYSIS.

BY S. WEIR MITCHELL, M.D.

I PUBLISHED last year, in the summary of the Proceedings of the Philadelphia College of Physicians, a brief communication, in which I pointed out the remarkable fact that any sudden cerebral palsy arrested the growth of the nails on the palsied side. Since then I have studied the subject with care, and have learned certain facts, which I desire to make public in advance of a paper which will treat more fully of the nutrition of paralyzed limbs.

The facts which are now known to me may be very shortly stated. The growth of nails is usually retarded more or less in all palsied limbs, whether the palsying cause be spinal, cerebral, or belonging to a nerve-trunk. As yet, owing to want of opportunity, I do not know whether or not there is any complete temporary arrest of growth in spinal or peripheral disease and injury. As regards the latter, I am disposed to believe there is not an arrest, but only more or less retarding of growth and deformation.

In cerebral palsies, whether from clot or embolus, there is an entire cessation of nail-growth on the palsied side. Usually when they begin to grow again it is a sign that the power of movement will also improve within a few days. The rate of growth slowly increases, but it usually requires four or five months for such nails to produce an entire length from matrix to free edge. To study the change, I stain the nails of both sides with nitrate of silver or nitric acid; the latter is preferable, because it soaks into and stains of a deepening yellow the whole thickness of the nail. Staining is not, however, essential except for comparison, because the line of arrested growth is marked by a deep groove, which for months may be seen as it passes down the nail, so that when accustomed to the rate of growth the place of this furrow will enable an observer to guess pretty well at the date of the attack of paralysis. The palsy need not be complete to cause this arrest. It is found in cases involving either cerebral motor palsy or sensori-motor paralysis, but as yet I do not know whether or not in the rare cases of pure sensorial palsies of cerebral origin it also exists, nor as yet have I any experience which enables me to say whether or not in sudden spinal palsies there is also complete cessation of nail-growth.

These observations have naturally led me to a close study of the nutritive changes as regards growth and

repair of hair and skin in the cases alluded to, but as yet I am hardly ready to speak with confidence upon subjects such as these, which promise to open a rich field in differential diagnosis. It seems to me possible that the nail-growth may not be altered in the same degree by lesions of the cerebrum, cerebellum, pons, and corpus striatum; and I have some observations which appear to point hopefully to these facts of nail-growth, as a future means of aiding us to tell what parts of the brain have been attacked.

Very recently, one distinct, and, as I believe, most valuable, practical contribution to diagnosis has come out of my observations. It is briefly this:

In all sudden cerebral palsies the nails cease to grow. In hysterical palsies of one limb, or both, whether paralytic or hemiplegic, the rate of nail-growth is unaltered.

This point was first determined in a case which I saw in consultation with Drs. Koerper and Frické. In a young girl, a long series of hysterical phenomena ended in complete sensori-motor hemiplegia. The nails, being stained, were found to grow equally on both sides. In a later case, seen by my friend Dr. Packard, the hysterical palsy was confined to the left arm, and the nails grew alike on the two sides.

A third case was that of a young married lady, who had had many hysterical attacks. She was scared by a wild cow in the street, and, after a cataleptic fit, lost the use of her left arm. Sensation was slightly altered. The nails grew at the same rate on both sides.

Two days later, I saw a middle-aged spinster, who four years before had had a slight attack of right hemiplegia, from which she perfectly recovered. She has mitral disease, and is a most likely person to suffer from palsy. On the 10th of April, 1872, she received a letter which greatly distressed her, and, in consequence, was seized with twitching of the left lower eyelid. A few hours later she became by degrees paralyzed as to motion and sensation on the whole left side. Many of the usual manifestations of hysterical palsy were wanting, and the previous history and the cardiac conditions were such as to make probable an organic cause. I stained the nails on the second day, and, although the palsy was unaltered a week later, the nails on both sides were growing. A few days after, it was clear that the rate of growth was the same, and I therefore ventured to assert that the case was in origin purely hysterical. A very speedy and complete recovery under appropriate treatment verified my prognosis.

I trust that I have said enough to make it appear that if I am correct in my observations, they promise to afford no unimportant addition to our means of discriminating between palsies of functional and of organic origin.

