The necessity of recognizing 'reflex spasm' produced by point pressure in contractured tissues : and of making proper division of the same before any mechanical treatment can be effectual / by Lewis Hall Sayre.

(13.)

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—BY—

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NEW YORK, N. Y.

"REFLEX SPASM."

THE NECESSITY OF RECOGNIZING "REFLEX SPASM" PRODUCED BY POINT PRESSURE IN CONTRACTURED TISSUES, AND OF MAKING PROPER DIVISION OF THE SAME BEFORE ANY MECHANICAL TREATMENT CAN BE EFFECTUAL.*

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Reprint from Virginia Medical Monthly, October, 1886.

Within the last few months several cases of talipes have fallen under my observation, where great loss of time, to say nothing of the pain and inconvenience borne by the patient, had resulted from the failure to recognize the conditions to which I shall draw your attention this evening.

Deformities are usually classed under two heads—congenital and acquired.

These two classes are subdivided into (1) deformities due to paralysis, and (2) into those due to contraction or shortening of certain tissues.

Contracted tissues may be divided into (1) *contracted*, and (2) *contractured.*

A *contracted* tissue is one which is simply shortened and

* Read before the Orthopædic Section of the New York Academy of Medicine, March 19th, 1886.

impaired in its movements, and which can be restored to its normal condition and length by simple stretching and manipulations.

A *contractured* tissue is one where the parts forming the tissue have become changed in their anatomical structure to each other, and cannot be lengthened except by the severance of the resisting tissues.

Upon the recognition of which class of shortened tissue is before you will depend the selection of the means most proper for the treatment, and consequent removal of the resulting deformity. And as the two classes demand somewhat different treatment, it would be well did we have some rule to aid us in our diagnosis.

The following simple rule has been of great service in determining which class of contraction is present in a given case, and has been the rule by which my father has been governed for many years:

When a contracted tissue is put upon the stretch, and the parts are brought as nearly as possible into their normal position, either by means of the hands, or mechanical aids, and then *additional* pressure is made upon the tissue thus stretched, either by making pressure upon the stretched tissue with the fingers, or by pinching it between the thumb and fingers, and no pain or voluntary spasm is caused, the tissue thus stretched and handled is simply *contracted*, and can be elongated by persistent traction and treatment.

If, on the contrary, this additional, or "point pressure," upon an already stretched tissue causes pain and an involuntary contraction, or spasm of the muscles of the entire body, the tissue thus stretched has become *contractured* or changed in its structure, and must be severed before the parts can be brought into their normal relations.

To attempt to stretch a *contractured* tissue is to subject the patient to a great amount of unnecessary pain, and at the same time run the chance of producing serious disturbances of the nervous system, as the involuntary contraction or "reflex spasm" of the muscular system is produced, in a less degree may-be, every time the *contractured* tissue is stretched. And you are all well aware of the disastrous re-

sults which sometimes follow long continued irritation of the nervous system, both from "reflex" and other causes.

Cases which have *contractured* tissues causing deformities, must have those resisting bands removed; and, in my opinion, this can best be done by subcutaneous tenotomy of *all the contractured* tissues, and the restoration of the parts to their normal positions at the time of operation. To attempt to rupture these tissues by manual or mechanical force is to subject the patient to the danger of a ruptured artery or nerve, as a force sufficient to tear these dense tissues could not readily be released before damage to other and more yielding tissues might be done.

By dividing subcutaneously *all* the shortened or *contractured* tissues, and immediately placing the parts in their normal positions, and retaining them there, having closed the wound made by the tenotome hermetically, the separation between the severed ends of the tendon, muscle or fascia becomes filled with blood, serum or lymph, which, being protected from atmospheric influences, becomes organized, and makes the tissue divided as much longer as the distance between the severed ends. Should the skin be also *contractured*, as is frequently the case, it must be freely divided. In this case, the wound, of course, would be an open one, and must heal by granulation, under antiseptic precautions, being careful to retain the parts in their normal or desired position during this process, and preventing any contractions until the wound is thoroughly healed, and the new tissues have become firm and healthy.

After this has taken place, massage, frictions, active and passive motions, with the use of electricity to develop the weakened muscles, together with such mechanical appliances as may be required by each case, will be demanded, and must be thoroughly practiced for many months before the cure is complete. But to endeavor to stretch a *contractured* tissue, one which causes a "reflex spasm" when "point pressure" is applied, will result in great loss of time, and disappointment to the surgeon, as well as cause the patient unnecessary pain, and possibly give rise to serious disturbances of the nervous system—all of which can be avoided

by recognizing the importance of the "reflex spasm" produced by "point pressure" in *contractured* tissues, their proper division, and replacement of the parts in the normal position at the time of operation, and retention during the time the divided tissues are re-uniting, thus preparing the way for appropriate after-treatment, which will in many cases yield most gratifying results, without trouble or annoyance to the surgeon, or causing the patient any pain or inconvenience.

The following cases illustrate the advantage of recognizing the doctrine above inculcated:

CASE I.—L. S., aged 8, only child of healthy parents, when a little more than a year old, had a slight convulsion, followed by high fever, and resulted in complete paralysis. From this she recovered to a great extent, although she has indistinct articulation, and imperfect use of the arms and legs. Both feet are varo-equinus. The tendo-achilles and plantar fascia of both feet give a reflex spasm on point pressure. Since she was 4 years of age, she has been under constant medical attention, and has had the feet manipulated and rubbed, and has worn braces of different varieties, but there has been no change in the deformity.

On *January* 27th, 1886, the tendo-achilles and plantar fascia of both feet were divided subcutaneously, and the feet restored to their normal position immediately after the operation, and retained there by foot-board and usual dressing. She suffered no inconvenience after the operation, and on *February* 8th, the dressings were removed, the feet being in their proper position, and the wounds entirely healed. Can stand and walk with feet flat upon the floor. Is to continue massage and electricity. No braces were applied.

March 8th.—Patient returned. Has improved more since the operation than in all the years previous.

CASE II.—C. G., æt. 14, strong, healthy boy, of good family history. When 2 years of age, he had a fall, resulting in paralysis of the right limb and part of the trunk; also bladder and rectum. The bladder and rectum recovered their power in a few days, and some months afterwards he began to walk, but did not put the heel of the foot to the ground, walking on the anterior part of the foot (talipes equinus). He was treated at this time by manipulation, and improved. But the foot could not be brought to a right angle with the leg; and as he grew older the deformity increased. He has

been under the care of many different physicians, and has worn braces of many kinds, until two years ago, when treatment was abandoned, except wearing the braces. The patient has now well-marked talipes equinus. The entire limb is undeveloped and shorter than the other. As "point pressure" developed "reflex spasm" in the tendo-achilles and plantar fascia, they were divided subcutaneously, the patient being anæsthetized, and the foot placed at a right angle with the leg, and retained there in the usual way. The boy suffered some pain from a large callous on the ball of the great toe becoming inflamed from the severe pressure, requiring the re-adjustment of the bandages and foot-board shortly after the operation. The dressings were removed at the end of a fortnight, when the wounds were healed, and the foot could be flexed to a right angle voluntarily and extended slightly, showing that the tendo-achilles was united. A high-heeled shoe (to equalize the length of limbs), with artificial muscles to flex the foot, was applied. Galvanism, massage, etc., to be applied to develop the limb.

The boy can now (two years after the operation) flex and extend the foot readily, and the development of the limb has been most marked.

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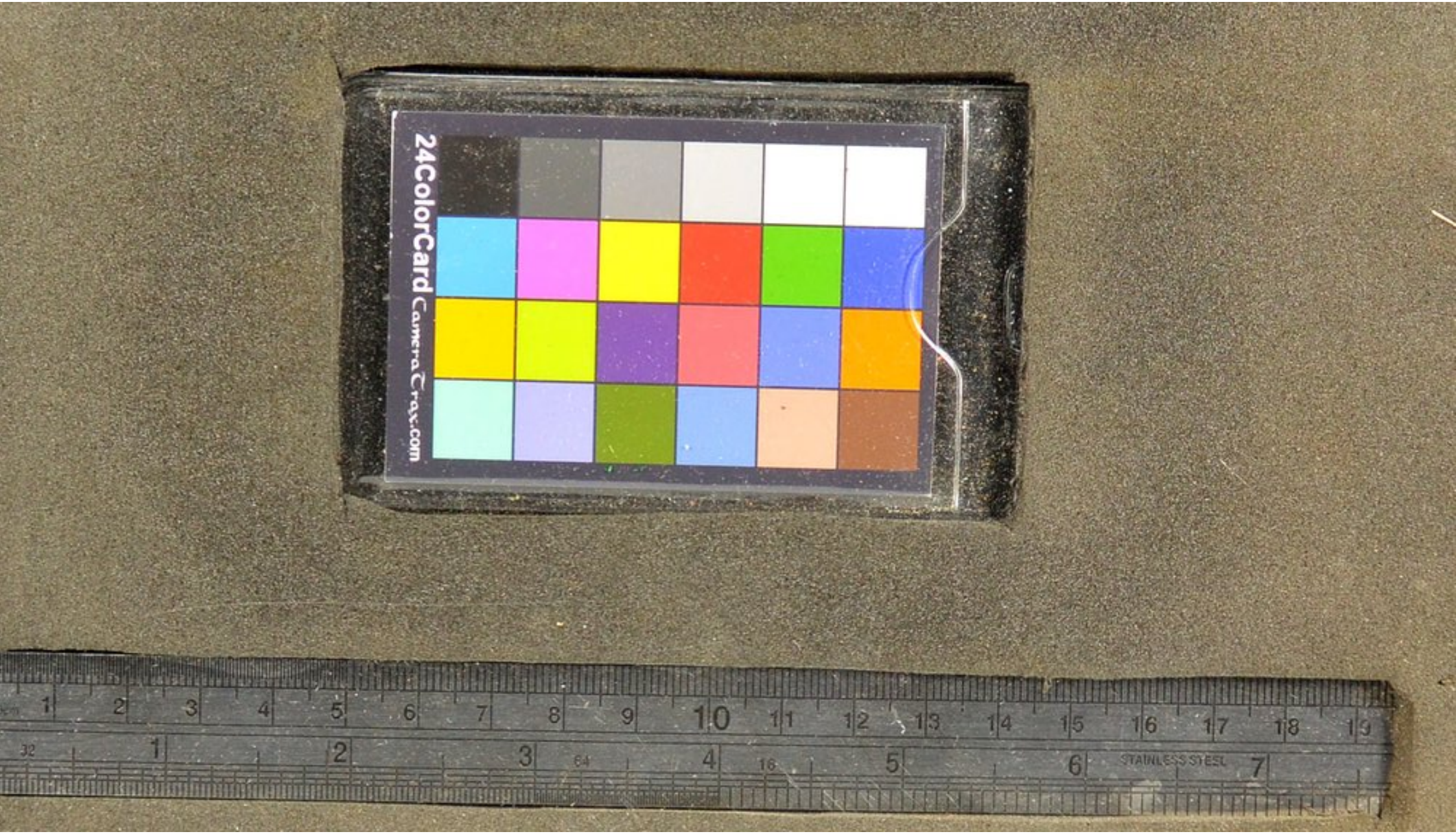
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