

PRESTON (Geo. J.)

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With the Report of a Typical Case.

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GEORGE J. PRESTON, M. D.,

Professor of Physiology and Diseases of the Nervous System,
College of Physicians and Surgeons, Baltimore.

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IF, along with the name, we accept the description of tetany given by Trousseau, Dance, Corvisart, Steinheim, and other writers of fifty years ago, then it is a very rare disease. Of late years it has been the tendency to include under the head of tetany many different varieties of muscular spasm. It would seem best either to restrict the term tetany to cases presenting the classic symptoms or to discard the name altogether and class all cases presenting such symptoms under the general term of muscular spasms of unknown origin. While this affection is not uncommon on the continent of Europe, it is rare in England, and apparently still more rare in this country. The disease, if we may call it a disease, may appear at any age, but is far more frequently seen in childhood and youth. Apart from

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the tetany of lactation, the true disease is very rarely met with in the adult. The classic symptoms are too well known to require any detailed description. Sometimes there are slight prodromal symptoms, such as numbness or tingling in the extremities, with some slight disturbance of motion. Then comes the tonic convulsion, which begins usually in the upper extremities. The thumb is strongly adducted; the fingers are pressed closely together and semi-flexed over the thumb; the hand becomes conical in shape, assuming the form called by Trousseau the "accoucheur's hand." The wrist is next involved, being turned in. The forearm may be slightly flexed upon the arm. In the lower extremities the toes are bent toward the sole, the great toe being turned under the others, and the sole of the foot hollowed out. The heel is pulled up, the leg and thigh being in a state of extension. The muscles are firmly contracted and resist efforts to overcome the contraction. The above is in brief the description given by Trousseau.

Occasionally the lower limbs may be involved first, or one side may be chiefly affected. In severe cases the contraction may involve other muscles, the diaphragm, œsophagus, larynx, muscles of the back and neck, producing opisthotonus, and very rarely the facial muscles may be affected. The attack generally lasts but a few minutes, relaxation comes on, and there are no symptoms during the interparoxysmal state. In some cases the tonic spasm may continue for hours or days, though it is doubtful whether these cases should be called tetany. The attacks recur with greater or less frequency for months or even years. The frequency of the attacks varies very much; in some cases they occur only three or four times daily, in others every few minutes. The following case conforms almost perfectly to the classic descriptions of tetany:

The patient, a girl of three years and a half, was referred to me by Dr. George Strauss. The family history was perfectly good, and the child had always been healthy. There was not the slightest evidence of rickets. Physical examination was negative, and the child seemed very intelligent. When she was one year of age, or two years before I saw her, she had the first attack. There would be months in which she was perfectly well, and then the attacks would come on for no apparent reason. While in my office she had an attack, beginning almost simultaneously in hands and feet. Her hands assumed the typical form described above—wrist and elbow slightly flexed. The legs were extended, heels raised, and feet slightly inverted. Upon inquiry during the attack she said she had no pain, and except for the fact that she had to stop her play her father said she did not seem to mind the attacks. There was no involvement of the facial or other muscles. After a few moments of tonic contraction the attack passed off. At the time when I saw the patient she was having from ten to fifteen attacks daily. There was no anæsthesia and the reflexes were unaltered. Pressure upon the inner side of the arm or at the bend of the elbow would bring on an attack.

This I take to be a typical case of tetany, and I would be inclined to restrict the name to cases presenting in general such symptoms. So many different affections have been called tetany that it is difficult to arrive at any definite knowledge as to the frequency of the disorder. Griffith has collected all the American cases up to 1894, in number seventy-two. A cursory glance at these cases, as he has abstracted them, will show that many of them do not belong under the name of tetany. In this list are what would seem to be meningitis, trauma, hysteria, and simple muscular cramps. Thus it will be seen that tetany is a very uncommon affection in this country, although it is not rare on the continent.

Among the symptoms of tetany may be noted a curious

increase of electric excitability; this is so marked that an anodal opening tetanus can be obtained. Chvostek has called attention to the fact that pressure over the facial nerve at its exit from the foramen will produce contraction of the facial muscles. The question has been raised but never definitely settled as to whether the Trousseau sign is produced by pressure on the artery or the nerve. The altered electrical reaction would rather point to the latter as the most probable factor.

The two interesting questions concerning tetany are, first, whether it is a sufficiently distinct affection to be separated from the many other forms of muscular spasm, and, second, what is its probable cause? In regard to the first of these questions it may be said that so long as our knowledge of the nature of the disease is so uncertain it is best to hold to the clinical differentiation. The symptoms of such a case as the one related are certainly sufficiently distinct to give it at least a clinical place.

With our present knowledge of tetany it is impossible to do more than speculate as to its cause. The symptoms point to the spinal cord as the seat of the disease rather than the brain.

The four extremities are practically always involved, and when this is not the case the two upper extremities are affected. Tetany involving one side is very rarely if ever met with. Both motor and sensory nerve elements are involved, and decided trophic symptoms have been noted. A curious fact is the occurrence of tetany after the removal of the thyroid gland, Wolfer having noted it seven times in seventy operations. In this connection it might be noted that both in tetany and Basedow's disease the electric excitability is greatly exaggerated.

Of the many causes to which the disease has been attributed, the most important seem to be diarrhœa and ex-

hausting diseases generally, and in adults lactation and exposure to cold and wet. The theory that all cases are rhachitic is not borne out by observation. The causes above mentioned are just the ones that *a priori* we would expect to affect the nerve cells, perhaps using up their protoplasm. Again, the recovery from the disease may be rapid or, on the other hand, very slow, which, according to this theory, would mean that the protoplasm of the spinal nerve cells was only slightly or very markedly involved, these latter cases giving rise to nutritive disturbances. The autopsies that have been made by Trousseau and others are of no value whatever; certain spots of softening and the like are claimed to have been noted, but they were probably post mortem changes.

The course of the disease is very variable, showing a tendency to reappear after months or even years of absence. It is comparable in this respect to chorea vulgaris, though of longer duration. Gowers quotes several cases of tetany occurring in successive pregnancies, and Osler refers to a similar case (*Trans. Am. Assoc. of Physicians*, 1894). The prognosis is practically always favorable, only a few doubtful cases of death having been reported. The diagnosis presents no special difficulties if we restrict the term tetany to those cases that present the classic symptoms. *Petit mal*, tetanus, organic brain disease, and hysteria are the affections most likely to be confounded with it. It is not likely that true tetany is often mistaken for hysteria, but the opposite mistake probably frequently occurs. One feels convinced in reading many of the cases reported as tetany that the condition was hysteria. The unilateral character of hysterical contractures and the presence of other stigmata are usually diagnostic. The treatment may be summed up in a few words: Good hygiene, proper diet and exercise, the bromides and electricity, and perhaps

local applications. Chloroform applied locally seems to have a good effect, as does ice to the spine. I have ventured to bring this case before the notice of this society in the hope that more cases of this rare and interesting affection will be observed and reported.

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