

AN

INAUGURAL DISSERTATION,

ON

Petanus

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Tetanus

Having deferred until within the present session of our medical school, the preparation of my inaugural dissertation, it can not be expected that time will permit - even if space and talents were allotted me - to give anything like a full account of all symptoms, pathology and treatment of this strange and unmanageable disease. Tetanus, what is it? we will call it a disease in which there is a permanent tonic contraction, with repeated clonic or spasmodic action of all the muscles of voluntary motion. A contraction of certain sets of muscles, has given rise to the following names in Tetanus - such as lock jaw or trismus; when there is permanent contraction of the muscles of the jaws. Opisthotonos when the body is thrown or bent backwards, Emprosthotonos when it is bent forwards, and Pleurosthotonos when it is twisted to one side.

Varieties. The two great varieties are the symptomatic or traumatic; and idiopathic tetanus.

Every case of tetanus arising from a wound or external injury, is called by most writers traumatic; those cases in which we can see no appreciable cause are called idiopathic tetanus.

Symptoms. Among the first symptoms of tetanus, are a feeling of general uneasiness; depression of spirits; a sense of fear; deep seated pain in the part affected; with chillings and twitchings in the muscles. The muscles of the shoulders; back of the neck; and jaws are the first in which the true tetanic stiffness commences; making it difficult to open the mouth wide; and giving to the upper portion of the body a straightened and stiff appearance. The muscles of the diaphragm soon becomes involved, producing sensation of constriction about

the chest; which is attended sooner or later with deep seated pain in the region of the stomach; reaching back to the spine. These symptoms may all be present; and indicate an attack of Tetanus; before we have the spasm or clonic contraction of any of the muscles. The tonic contraction or permanent stiffness of the rest of the voluntary muscles of the body gradually obtains; until the muscles of the whole body assumes a hard or woody appearance. Then you have the powerful spasmodic contraction of the muscles, which while it lasts; throws the body into certain fixed positions; so immovable for the time being, as if the whole corporeal frame was a congealed mass. The jaws are permanently clinched; all the muscles of the face are contracted, drawing the angles of the mouth upwards and

outwards, expanding the nostrils; the brows are drawn; the eyes are fixed and staring; giving to the whole face an expression of anxiety and distress; which when once seen is not easily forgotten. During the spasm the patient's sufferings are intense; his feelings are described as being all over the whole body; not unlike the sensation produced by severe cramps. After the spasm goes off; he appears to be easy and probably does not suffer any great deal; but there is still that tonic spasm or permanent stiffness of the muscles, which soon begins to interfere with the proper performance of all the functions of animal life. The bowels become costipated, and are acted on with difficulty by the most powerful purgatives; the urine is scant; or probably the secretion is entirely suspended; the

functions of the liver are deranged; and the proper secretion of bile ceases; respiration is performed imperfectly and with difficulty; and all the unpleasant symptoms attendant upon the suspension of these three important functions soon follow.

And they are too numerous to mention here. The skin at one time seems to perspire healthily; at another is bathed in sweat and then again it is dry. The mind is clear and unclouded until towards the last moment of life; when it seems to give way under the violence of the disease. The circulation at first is but little affected, but as the disease progresses, the pulse becomes more or less hurried; indicating in some cases inflammatory action, in others only irritability of the system.

Anatomical characters. In a great many cases there is no evidences of a serious disease to be found after death. But in others cases, the brain and particularly the membranes of the spinal, seem to have been during life the seat of extensive inflammation. Much too has been said about the condition of the wound in traumatic tetanus; but if there is any peculiarity about it; it is a cicatrized appearance of its edges; without union of the parts. This I look upon as a very unfavourable appearance of any wound; particularly if there is a tendency to tetanic affections; prevailing in the country at the time. Causes. The true cause of tetanus is undoubtedly a peculiar predisposition, but what that predisposition is or what will bring it about; is entirely unknown.

The weak and feeble, the robust and healthy, seem to be a like subject to tetanus.

The exciting causes, in the great majority of cases is a wound or external violence. Where there is nothing of this kind, and tetanus exist, it has always been attributed to cold; sudden changes of weather from heat to cold; or exposing the body - after being over heated - to the cold damp night air; is thought greatly to favor an attack of tetanus; where a predisposition exist. Pathology. There is no doubt but that the true pathological condition in tetanus; is a peculiar irritation of the spinal axis; first commencing in the upper portion of the cord; and thence extending itself to the other portion of the excitor motory system of nerves; involving the medulla oblongata; with parts of the brain.

And although inflammation is often found to exist in portions of the membranes of the spinal marrow; and of the brain; and even in the substance of the spinal marrow itself; it is not believed to be the true pathology of this disease; but rather, that the inflammation is brought about by; and sustained by the spinal irritation and tetanic condition. It is true that inflammation in one portion of the spinal marrow; may produce irritation in other portions of the cord; and in that way gives rise to tetanus, mixed up with paralysis; which is sure to follow any extensive inflammation of the spinal marrow. Spinal irritation may arise from the injured extremity of nerves; as in worms affections; or may originate in the spinal marrow itself, from the effects of cold &

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Diagnosis. Probably there is no very important disease the diagnosis of which is more easily ascertained than tetanus. Hysteria and hydrophobia are the only disease that have any symptoms in common with it. It may be distinguished from hysteria, merely by the expression of the face; in tetanus there is great anxiety, with every mark of distress pictured in the face, while in hysteria the features are always smooth and calm. In fact there is no disease in which we have the constant rigid condition of the muscles with the powerful spasmodic action, that is seen in tetanus. Poisoning by strychnine is said to produce tetanus or a condition of the system so much like it in every respect as to be with great difficulty distinguished from it.

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Prognosis. We need not hesitate to pronounce the life of any patient, to be in very great danger who is labouring under an attack of true tetanus, although the journals come to us every now and then, with cases reported to have been cured, with this or that remedy; the true record of the most learned and judicious practitioners, show but a very small proportion of cures to the number of cases. This is more particularly the case in traumatic tetanus; in fact some very smart medical men think that no case of tetanus arising from a wound can be cured; after the disease has fairly set in. Many things can be done however to give ease and quiet to the patient; and it is as much our duty to study and apply such means; as it would be if we could cure half of those who are attacked.

But in the other variety of Tetanus; namely the idiopathic cases are frequently performed, and this is saying a great deal for medicine, for few cases if left to nature would recover. I mean of course in my remarks, above cases, in which the symptoms are constant, and well developed, mild cases frequently occur in which a cure may be performed, or if left to nature, recovery might take place. Treatment. The first thing is to remove the eccentric causes of irritation, whether caused by a wound or by obstructions in the bowels; then diminish centric irritation, depending on a diseased state of the cord. In the local treatment, the first thing to be done is to remove all foreign bodies from the wound, if there is any. Make incisions for the free discharge of puss, and relief of inflammatory swelling.

The part may be bathed with warm decoctions, a solution of opium or extract of belladonna in an ounce of water, may be applied over the whole part, and the part be put in a large soft poultice. Ice poultices, for heat and moisture is the thing. Constitutional treatment. In cases attended with inflammatory symptoms and the wound hot and painful, we should bleed from the arm, and cup upon the spine. Mercury should be given so as to induce ptyalism in any inflammatory case, two or three grains of calomel may be given every two or three hours. Purgatives should be given, for there is always more or less constipation. After the purgatives have been given we should use injections of turpentine until the bowels shall be come empty. An enema of tobacco about three or

four ounces; may be given after the bowels have been evacuated, or before if the symptoms require it; it produces deadly sickness, cold perspiration, fainting and relaxation of the muscles; the injection should be repeated often enough to keep the muscles constantly relaxed; but we should take care and not let the heart become too feeble; we should give stimulants. Lonic: the muriated tincture of iron and quinine are the best, and wine in large quantity; are of great service in cases attended with debility. Chloroform will relieve but will not cure - applications over the spine - the white hot iron run rapidly up and down the spine - Turpentine Chloroform - hartshorn - rub each until blisters are formed - Most every thing in the employment of the profession in some -

way or other have been tried; and most all of them with out any effect. Doctor Paul L. Eve, thinks that there was never a case of true traumatic tetanus cured.

We must in all cases sustain and keep up the strenght of the patient by beef tea, wine and, in fact any thing that we can get down his mouth; that will not irritate the stomach.

Yours respectfully
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