Some clinical observations on diphtheria and veratrum viride as the basis of treatment / by Jno. M. Boyd.

2.

Veratrum Viride

—IN—

DIPHTHERIA.

—BY—

JOHN M. BOYD, M. D.

Read before the Tennessee State Medical Society at its Fifty-fifth Annual Meeting, held at Knoxville, commencing Tuesday, April 10, 1888.

SOME CLINICAL OBSERVATIONS ON DIPHTHERIA AND VERATRUM VIRIDE AS THE BASIS OF TREATMENT.

BY JNO. M. BOYD, KNOXVILLE, TENN.

I propose to present some points founded on bedside study of diphtheria and to suggest that plan of treatment which has proven most efficient under my own observation.

So far as I have any knowledge, this ancient and much dreaded scourge made its first appearance as an epidemic in East Tennessee in 1858, only thirty years ago. Then its outbreak was in Jefferson county, a case having been brought there from North Carolina. Thence its spread was rapid and its prevalence marked by great fatality.

In 1860, I saw one case of the disease in Knoxville.

In 1861 and 1862, having changed my residence to Jefferson county, the opportunity to see diphtheria was frequent, and in its virulent form, and on the very spot where it had first found footing in East Tennessee and where its fatality had been so notable since 1858. There, my observation was extensive and I realized fully that the results of treatment were, as a rule, unsatisfactory, for it too often happened that every child in a stricken family perished. For the first seven years after the war Knoxville had almost an immunity from diphtheria. About 1874 occasional cases were reported, and our mortality table has shown them each year since. But Knoxville has had up to the present time no such epidemics as have visited so many localities in our section of the state since its advent in 1858. So much for its local history and for the opportunity to make a practical study of diphtheria.

It is not the purpose of this paper to discuss the etiology of the disease under consideration, nor yet to consume our time in pushing any of the special views of its pathology.

This branch of the subject had better be delegated to those who are fitted to make elaborate research in the field of causation, and in the essential nature of disease.

It is especially to the treatment that I wish to engage the attention of this body, and particularly to the modifying and benign influence of veratrum.

And while the idea about to be advanced may be earnestly combatted by those who hold to the opinion of the accredited depressant influence of the drug, and to the view of the asthenic nature of diphtheria, I beg to submit in maintenance of the plan of treatment now proposed the following facts and argument:

On December 28th, 1881, I was called to see a child in this city 16 months old. Found a well defined and vicious case of diphtheria in the person of my little patient, which in a few days terminated fatally.

During the course of this case a babe of Mr. L———, four months old and under the same roof, was attacked. It, too, was a case of marked severity as shown by the rapid, hard, small pulse, the sallow skin, the range of fever and the twitching of the muscles of the extremities.

At the end of five days the larynx was invaded and croupous diphtheria became a serious complication, and about the same time the nasal passage displayed false membrane and the nostrils were entirely occluded. Impossibility for the child to suckle added inanition to the dangers of the situation.

The membrane covered the fauces and it protruded from the anterior nasal apperture in white hemispheres. The pulse was 180, small and thready, and sepsis was beginning to impress the little sufferer. The grandfather of the child, Dr. W. Whitson, a practitioner of prominence of Jordan Valley, Tennessee, was in daily correspondence with the mother and suggested through her that a drop of Norwood's Veratrum would be warranted if the pulse could not be controlled by less. I was then giving veratrum in smaller but increasing doses, and at once gave a drop, repeating it every two hours till the pulse fell to 80 per minute. This seemed to me, at that time, to be a very large dose for a four months old child, but after it had been given four or five times, and the pulse had dropped to this, below normal rate, a less quantity easily held it there.

Snow under sunshine never melted away more surely than did this membrane under the favoring conditions incident to the influence of veratrum. Within the following twenty-four hours the child was able to nurse and its recovery was rapid.

The lesson was not lost, for as other measures were unchanged, the only possible influence to which such a brilliant result could be attributed was to the effect of veratrum.

Can it be that there is an antiseptic or an antidiptheritic agency exerted under the full influence of this drug? Could rest, so important, we know, to the recuperation of nerve force, explain the rapid recovery in this case?

The patient was rested when it was first attacked and the disease progressed until asthenia and sepsisi threatened at any time to terminate life. Facts would make the opinion respectable that there is an antidotal virtue in the positive influence of veratrum.

But setting aside all claims to value as an antidote, the controlling power of the medicine can, on other grounds of merit, be presented, I hope, with sufficient reason to invite favorable consideration. Since the occurrence of the case above cited observation has verified the good results of this therapeutic agent in diphtheria. In the six years since, sixty-seven cases have fallen primarily to my care, and a number of others in which I have had a consultant relation, and under its timely use its claims to the merit of extraordinary efficacy have never disappointed me. And often in a single case conditions have occurred which offered more than once a demonstration of its value.

And the cases upon which the conclusions have been reached which have prompted this paper have not been questionable ones; many of them have not been mild, but every one asserted as a basis for this record has been a decided case.

There has never been a malignant epidemic of diphtheria in this community, but we have often had individual cases of malignant type and a fair share of such have fallen to the veratrum treatment. And I am prepared to make the assertion that the *early* and *decided* use of veratrum as the *basis of treatment* offers better promise of good results in diphtheria than does any other plan that I have had opportunity to witness the effects of.

It should not be used merely as an incidental measure, but it

should be made the *basis of treatment.* To slow the pulse should be the sine qua non. To say it roundly, all the world has used veratrum in diphtheria. But it is a very different use of it when, as an essential feature, it is made the prime purpose to *slow the heart's action as a basis of treatment.*

Pardon the seeming immodesty, but the comparison answers my purpose for illustration; everybody used carbolic acid, but it remained for Mr. Lister to present its use to the profession as a basis of antiseptic surgery.

Upon being called to a patient we find the dull sallow complexion. The pulse is 112 to 140, hard and wiry, and subsultus is observed. Cervical glandular enlargement is revealed to the touch, perhaps to the eye. Is your throat sore? Yes. Have you had scarlatina? Yes. Now the diagnosis is almost definite and it only remains to examine the fauces to verify what is already most probable.

So characteristic is the pulse of diphtheria in its rate, and tense wiry nature (only resembling scarlet fever and some cases of cerebro spinal meningitis) that the disease may with great certainty be predetermined if inflamed cervical glands add to the grounds of suspicion. In sixty-seven cases in six years past I have found only two instances of slow pulse, that is, only moderately accelerated, and they were mild in type.

As a rule, the viciousness of the attack may be better measured by the pulse rate and tenseness than by any other symptom. There may be little membrane in sight, for it may be more post nasal than faucial, but the pulse wlll tell the earnestness of the invasion.

And it is not influenced in its rapidity or fullness by physical exertion, as is ansemia or asthenia, but keeps its even tenor of speed and tension almost to the fatal hour.

Especially will the characteristic pulse be displayed in those cases where the membrane is deep set in an ulceration and presents a pearly white color, and is so thick that it can be tilted about by the touch of a probe, by reason of its firm consistency—a condition of deposit common in malignant types. I dwell upon the character of the pulse because there is reason to believe that it is through measures adapted to the function of the heart that we are to find some effective means of controlling the disease. If the

heart is slowed, the rate of circulation is slowed and the inflammatory processes about the seat of this lesion are mitigated.

It indeed appears that while under the positive influence of veratrum the system has a tolerance for the poison and there is demonstrated a resistence to further progress of sepsis and to the spread of the membrane. My observation, which has compassed one malignant epidemic and quite a number of cases scattered through the past fifteen years, has led me not to fear asthenia in the use of veratrum, but rather to fear exhaustion from continued rapid heart action. We know how often patients are lost from syncope. The rationale of such deaths is, that the entire organism under the stress of a systole and diastole of 160 to 180 times per minute falters and succumbs from great waste of nerve force. Rather rest the tired organ and the economy will take on recuperation and resistence to the invading poison.

Constant tension cannot long be borne, as witness the effect of continued strain upon the ciliary muscle, how when overtaxed, sympathetic disturbance begets dizziness, headache, nausea and palpitation. Or of a common punishment in the army where a soldier is forced to hold up overhead some weighty body, as a brick, how soon his burden becomes unbearable.

The best protection against asthenia in diphtheria is rest through means of a slow heart.

Is veratrum a sedative in the sense of a systemic depressant? I was taught as a student that digitalis was directly a sedative; now it is daily given as a heart tonic.

Remember that it was in a case of heart exhaustion in pneumonia that Norwood made his first medicinal use of his tincture, and under unpromising conditions, and the woman's pulse was brought down from 180 to 80 per minute, and under its treatment she recovered.

And in the free use of it, remember that Dr. Norwood a year before his death and only four years ago, stated before the Georgia State Medical Society that no instance of death from its sedative influence had been reported or had been brought to his knowledge, though it had been taken through mistake and design in teaspoon and tablespoon quantities many times. Of course positive neusea sakelessly continued would contribute to a fatal result by exhaustion.

In accordance with such views as have now been expressed, the treatment of a case of diphtheria should be conducted as follows:

First, mop all the mambrane in sight with this standard mixture—

Liquor Ferri Sub, Sulp., 1 drachm.

Glycerine.

Water aa, drachms 4.

Don't use a camel's hair brush. Moths eat off some of the hairs and the stubs puncture the softened mucous membrane and carry the poison to the cellular tissue beneath, which deepens and extends the local lesion; but use a cloth mop on a slightly elastic stick. A fresh mop should be made for each application.

Then give to an adult a tablespoonful of a saturated solution of potass chlorate with three drops of Norwood's Tincture every two hours, the veratrum to be increased one drop if necessasy each time until the pulse is brought down to sixty or seventy per minute.

It is usual to find that when once lowered, a less quantity will hold it down. After each dose give eight grains of sulphur sublimed to be swallowed dry, or better still, to be blown with a tube into the throat. Rub the outside of the throat with kerosene oil or some other irritant. And give thoughtful encouragement to a simple nutricious animal food.

The application of the mop may be made at only alternate times that the veratrum is given if the membrane is easily detached.

This constitutes the general plan of the practice which has best met my views. It is not the purpose of this paper to detail all the measures which might be suited to the many phenomena of diphtheria. But it is proper that a statement should be made in evidence of the good effects of calomel in grain doses every hour in croupous diphtheria.

It may be of interest to mention the quantity of Norwood's Tincture required to control the pulse in this disease. It is tolerated well as a rule, but in case nausea is disturbing to our purposes it must be increased cautiously and ommitted occasionally. The purpose should be to increase from a moderate dose for the age of the patient to whatever is necessary to bring the pulse to seventy or below in an adult within six or eight hours.

In a child four months old three and a half drops were reached before any impression was made and then the pulses dropped to twenty-four beats per minute. A few drops of whisky threw off the influence sufficiently for comfort in half an hour.

A child two years of age required five drops, and another seven years, seven drops, every two hours to bring the heart under control. These were the largest doses I have found necessary and in all of them pathology was steadily lessened under the conditions of slow heart. All the above instances required less to control and keep a steady action than was necessary to first bring about sufficient effect.

I have observed that a decided and abrupt slowing of the pulse accompanied by more or less distressing nausea is always followed by a mittigation of subsequent symptoms.

And so too, in scarlatina, but not in so marked a degree.