

spoken of by the last gentleman but one, and this patient died. With regard to doing a hemilaminectomy, I would infer that it was a difficult operation, because a hemilaminectomy is the removal of a bone in a deep surface, but in regard to the technique, in the first case I did it by rongeur and chisel; in the second case by the Devilbiss forceps, which I think is a very useful instrument, here as well as on the brain. In doing these operations I made one incision and pared back the tissues on either side and packed. After denuding the point, I took a small trephine, and, opening one of the laminae, I introduced this instrument to bite out any of the tissues.

DR. J. C. MUNRO, Boston—Why not do a lumbar puncture in place of any form of laminectomy if relief of pressure of the spinal fluid is all that is sought? A hemilaminectomy has no advantage over a complete operation from any point of view. The latter operation can ordinarily be done in twenty minutes and with very little shock. As to wiring the laminae after operation, there is nothing to be gained; I have seen a number of cases of removal of several laminae without any subsequent trouble, one patient having had eight laminae removed in blocks of four.

As for operating early, I believe in it if it is not too early. In the case of a man who falls five or six stories and breaks his back, I believe it is bad surgery to operate while he is in profound shock; it is better to delay until reaction sets in, when the operation, which would easily be fatal at first, will be of but slight importance. The presence or absence of sensation is not of itself a contraindication to operation; other factors must be considered. I have not found it necessary to use oxygen in my cases; they have all taken ether well.

In reference to Dr. Patterson's laminectomy in meningitis, I think it has been done a good many times and may be of benefit occasionally, but ordinarily lumbar puncture will answer the purpose.

I should think that the use of the forceps that Dr. Bailey suggests would be good, but there is no use in lengthening the operation, and I am sure that my forceps aid materially in overcoming both delay and difficulties.

## THE TUBERCULIN TEST, AND THE NEED OF A MORE COMPLETE DIAGNOSIS OF TUBERCULOSIS.

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Having been at work on similar lines<sup>1</sup>, I am much interested in the perusal, just finished, of the excellent paper of Dr. Edward B. Otis, on the "Value of the Tuberculin Test in the Diagnosis of Tuberculosis<sup>2</sup>." My friend Otis may say that I am too sanguine in my discussion of his paper. I will return such a compliment by saying that he is too conservative, especially in his conclusions. For, though agreeing with him, in his high estimation of the test, I think he could have added from 10 to 20 per cent. to his successes, had he varied his procedure or differently estimated its results.

1. As to the tuberculin used: While allowing it to be preferable to use the same standard material as to virulency, the particular make—if it be pure—does not count for so much if the plan I propose be followed out, namely, to nearly double the previous day's dose, until some systemic or temperature reaction shall have occurred. It may be said that thus there will be occasioned a cumulative effect. That is precisely what can be estimated as a diagnostic measure of the susceptibility, or the latent tuberculosis existing in the person tested.

If a sufficient dose be not given to start with, I object to Dr. Otis' rule being made to apply, namely, "Allow several days to elapse before repeating the test," excepting, I would say, where you get a doubtful or incomplete reaction, or are testing a case already showing a daily exacerbation of fever. In that case the increase of that fever, and its subsidence in the interim between

delayed doses, is a diagnostic guide. But what would be a sufficient dose is not known in advance; it is a problematic affair. And here—I take it—comes in the explanation of why some of the Doctor's cases known to be tubercular, did not react. If too small dose be given, and several days are allowed to intervene—before the next dose—a slightly tubercular case is thereby acquiring a tolerance or partial immunity which precludes the very reaction we are after. Just so, an already resistant person, having a local infection, encapsulated tubercle, or glandular tuberculosis—i. e., scrofular or adenoid glands—will of course not react to an insufficient dose; especially if it be not repeated soon enough to overcome the tolerance already existing. This tolerance, progressively increased by appropriate intervals between injections, is just what we are after in the treatment of tuberculosis with tuberculin—now better still with watery extract—but the test under discussion, it is hardly necessary to state, is only intended for latent cases of tuberculosis, those not positively known to be affected, or as a proof of cure.

2. As to the maximum dose: I believe that the dose that Dr. Otis limits himself to, namely 10 to 12 mg., is insufficient for some cases, and consequently a correct diagnosis might be missed. Dr. von Ruck gave to himself 25 mg., and again, I understand, 35 mg., in order to be sure that a rebellious "cold," and suspicious signs, did not signify infection from his dealing so much with the tuberculous. I have succeeded in a few cases in becoming positive of latent tubercular infection, with 15, 20, and 25 mg., though the majority of cases tested began to respond to 5 mg. or less.

My method is to make a 1 per cent. solution of the crude tuberculin<sup>3</sup> in a .75 per cent. carbolic acid in distilled water. Of this then, .10 c.c. equals 1 mg. The commencing dose then would be from 1 to 2 mg. for a suspiciously sensitive and tubercular person—a girl in her teens, for instance—and 3 to 6 mg. for a less impressible person—an adult male, for instance.

I object to the arm for this hypodermic injection, or to choosing any place for it where liability to local inflammation might cloud the result. Underneath the shoulder blade, and on that side usually uppermost when sleeping, is the best spot. Then, if the temperature of the patient is known to be regular and even, or has been regularly taken for two or three days previously, at 9, 1, 4, and 8 o'clock, in order to catch any habitual daily variation, you are ready to commence the daily dose, nearly doubling the one of the previous day, until you get a first reaction. Then, if not fully satisfied, another increase after an interval of a day or two will clearly settle the diagnosis. As already intimated, the maximum dose may be 10 mg. and it may be 30 mg., according to the case; but the stage at which reaction occurs is used as a measure of the susceptibility and latent tubercular infection of the patient tested.

3. What is a sufficient and reasonably clear, diagnostic reaction? The answer to this question is capable of taking a wider range, I believe, than that taken by Dr. Otis. As he states, it is unfortunate, owing to the "ambulatory" character of his clinic, "that local condition after the test was not noted," and that the personal sensations of the patient had to be relied on, as to whether or not a reaction had occurred. I believe that by the stethoscopic and visual evidence of local changes in suspected or unknown diseased areas, and from the resulting variations in the temperature, others would have been found to have reacted.

<sup>1</sup> "A Plea for the Better Appreciation of the Tuberculin Test in the Diagnosis of Latent Tuberculosis." Jour. of Tuberculosis, April, 1899.

<sup>2</sup> JOURNAL, Oct. 28, 1899.

<sup>3</sup> Obtained from Victor Koechl & Co., or Von Ruck's Laboratory.

Aside from grippy sensations or general malaise, there may be a tenderness in tubercular growths, or in glands or cervical adenoids and a stiffening up of lung tissue—peribronchial glands—perhaps due to increased leucocytosis excited there. In affected lung areas this is to me instructively diagnostic. Its detection depends on “the before and after taking” investigation with a good sound-transmitting stethoscope. The exaggerated bronchovesicular breath-sound, higher pitched than before, or puerile in character, may thus be found in a few cases. I detected this local sign eight or nine years ago, when crude tuberculin was first used in treatment, but I have succeeded in impressing but few physicians with its existence, or importance, perhaps a fault of technic. However, in several cases it has located for me an affected area in a previously unsuspected spot. It is one of the nicest confirmatory diagnoses we have of the previously uncertain finding of physical exploration and auscultation, and who of us is not encountering these uncertainties? I am sure I do frequently. Others must, for I could frame an arraignment of the average physician for carelessness, or what is more, ignorance of what should *not* be uncertainties. This arraignment would be based on some such summary of facts as follows:

1. Physicians almost everywhere, measuring by the fees they charge, do not adequately estimate the importance of their physical examination. Country doctors often charge but little more for such services than for ordinary visits; others give too little time to a critical examination.

2. Not 5 per cent. of the physicians in the United States keep tabulated records of their physical examinations.

3. Too often the chest during exploration has been unexposed, or parts of the thorax have been entirely overlooked.

4. In country practice generally no plan has been arranged by which to determine the daily variation of temperature.

5. Mensuration has been defective, and not 1 per cent. of the physicians have accurately, by measure, compared the movements of the two sides of the chest.

6. Not 5 per cent. of several thousand examinations by others known of have had stethoscopic percussion tried, the most valuable means we have for detecting and outlining areas of softening or excavation. Another method nearly as often neglected is auscultation during a cough, a valuable method in determining the very commencement of softening.

7. In probably not more than 1 per cent. of examinations have the spirometer and manometer been used, instruments so needful to confirm and throw light on a correct diagnosis, and doubt on an incorrect or false one.

8. Six-sevenths of the stethoscopes in use are quite deficient in sound-transmitting qualities, and the fact that so many phonendoscopes and auscultoscopes are sold in itself bears proof of the diagnostic “inproficiency” of the average American physician.

9. The so-called “stomach coughs,” “typhoid pneumonias,” “bronchial catarrhs” and “chronic bronchitis” are far too often given as the explanation of conditions evidently tuberculous from the beginning.

10. The expectoration has been previously microscopically studied in less than 10 per cent. of the cases seen in the last ten years, and too often, when examined, a negative result, to be expected at the given stage, has lured the physician and his patient into harmful inac-

tivity, until all of a sudden the disease has broken forth into a state of angry vigor that any layman, not to say doctor of medicine, could understand.

11. The tuberculin test has been seldom used, even during the past five years, when the experience of veterinarians in every state of the Union, and of divers physicians all over the country, was amply sufficient to convince a fearful and over-cautious profession of the comparative harmlessness of this excellent test.

These are only a few of the criticisms which show the need of greater care and proficiency in diagnosis by physicians universally, before we can get ahead of tuberculosis, i. e., detect it in its incipency.

The questions of treatment, either climatic, hygienic, constitutional or specific, are not here being considered or even mentioned. I am considering diagnosis only; and twenty-six years of experience with invalids, referred to me by courtesy of brother physicians from all over the country, has given ample basis for delivering this diagnostic “kick.” The climate here is all right and will add 10 to 20 per cent. to the recoveries otherwise obtainable in low altitudes, but the revised records of individual cases confirm and enforce the truth that an earlier and better diagnosis of tuberculosis is needed.

In lately reading Dr. E. C. Dudley’s excellent work on gynecology, I was impressed by the definiteness of description shown, and the demarcation of the line between what we know and what we do not know. It was in marked contrast to our vague knowledge of thoracic and blood diseases. After all, the superficial, drifting laxity, complained of in general medicine, may have its excuse in the inferior estimate the doctor himself puts on his services, and an unappreciative laity’s ignorance of the importance of detail and thoroughness is perhaps only a reflex of this inefficiency characteristic of the times. Tuberculosis is so much the accompaniment of poverty that an incentive is wanting to the carrying out of that nicety and thoroughness of detail in diagnosis which wealth makes possible. Therefore, it seems as if publicly-supported institutions, boards of health, dispensaries and hospitals ought especially to be supplied with and to utilize the most accurate means for the early diagnosis of tuberculosis, and among them the tuberculin test.

## OPHTHALMIA NEONATORUM.\*

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Ophthalmia neonatorum is a disease assumed to occur coincident with birth. Clinically, it always means some form of purulent inflammation of the conjunctiva. It has been variously denominated as catarrhal, mucopurulent, blenorreal, and gonorrheal. It appears as a catarrhal or suppurative inflammation of the conjunctiva, attended with more or less swelling of the lids. It makes its appearance, according to Swanzy, from the second to the fifth day after birth. Noyes fixes the time “at about the third day, but may be delayed as late as the eighth day.” Nettleship says it appears on the third day after birth. Fuchs says it appears, as a rule, on the second or third day. It is agreed by all writers on the subject that the disease occurs uniformly between the second and eighth day after birth.

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