has been pointed out. I have had some experience with one modification, that of Bauer, and while I can not go into the details here of the defects I found in that modification in comparison with the original Wassermann test, I can state that from what I have seen, none of those modifications ought to be used, and we ought to stick to the original Wassermann test, which has already been tried in many thousands of cases. We have from four European clinics alone the reports of 10,000 cases.

Now, so far as my material is concerned, from the standpoint which interests you, it has been rather scanty. Most of my cases were of the ordinary cutaneous type and they came from the hands of the dermatologist; but I have examined 8 cases of tabs of which 6 were positive and 2 negative; the 2 cases which were negative were patients who had been treated with mercury and the iodids. I had 3 cases of early paresis. All of those reactions were positive. The other cases examined were of doubtful types and they were all negative, but all of those were proved finally not to be cases of syphilis. So, on the whole, I can confirm on a very small number of cases of tabs and paresis those larger statistics on these parasyphilitic affections given here to-day.

In conclusion I want to urge you to stick for a while at least to the original Wassermann test. Let it be made by men competent to make it and let us not take any statistics from men who say that they find that 25 per cent. of their cases of tuberculosis give a positive reaction. A positive reaction by the Wassermann test means syphilis and nothing else, except, of course, an occasional case of scarlatina, leprosy, etc. A man who gets 25 per cent. positive reactions in tuberculosis doesn't know how to make the test.

DR. B. SACHS, New York: I have very little to add except that the remark which the last speaker made, I think, has a great deal of truth in it; that if any one were to claim that he had found 25 per cent. of tuberculosis cases giving a positive reaction under the Wassermann test, personally I should be very much inclined to doubt the accuracy of his test. The only safe position for all of us to assume is that this entire question is in its earliest stage; and the one reason why I was very glad to help bring this subject before the meeting to-day was to encourage as many men as possible to take up the line of investigation; and I think we shall only arrive at the truth of the matter after we shall have had statistics upon thousands and thousands of cases. It will be much the same, I think, as it was at the time of the agitation in favor of the adoption of the Widal method in the diagnosis of typhoid. Everyone now knows about how much importance to attach to a positive or negative reaction in typhoid.

In order that my own view may not be misunderstood, I would like to say that I agree with those who favor retaining the Wassermann method, and I hope that everyone who works in this field will take the trouble to acquire the original method. But I also want to say, as one who has personally worked in this field and who has tried to do conscientious work in it, that I hail with delight Dr. Noguchi's attempt at a modification of the method, and chiefly for the reason that everyone who works with the Wassermann method knows how difficult it is at various times to obtain satisfactory material for reagents. I think the suggestion made is perfectly correct. The method should be designated as the Wassermann test in deference to Wassermann, who did the great original work in this field, while the method described by Dr. Noguchi should be called the "Noguchi Modification of the Wassermann test." Dr. Noguchi's idea of trying to dry these various reagents, preserve and have them handy for use at all times is one that I can only admire. I would suggest that everyone who works with the Noguchi modification should for the next year or two use it and control it by a parallel series of tests according to the original Wassermann reaction. In that way, and by making comparison between the two methods, we will in time learn whether the Noguchi method can be accepted as a full substitute for the Wassermann reaction. In a parallel series of my own of a large number of cases, the agreement between Noguchi's modification and the original Wassermann test was very remarkable

indeed. The differences were confined to three or four instances and such differences can readily be explained. They were so slight that I want to go on record as much impressed by Noguchi's modifications. But I plead in favor of running the two tests side by side for a considerable period.

DR. H. NOGUCHI: I regret very much that Dr. Castelli appears so far to misunderstand my attitude toward the original Wassermann method as to speak of me as a bitter critic. My attitude is simply this: I recognized certain defects inherent in the Wassermann method, and what I have done is to improve that method by eliminating these defects. My criticism is a criticism of the principles involved in the technic and not of the persons employing it; and hence there is no bitterness in my criticism. Dr. Castelli has also referred to the work of those whom he refers to as my pupils. In the usual sense of the word, I can not be said to have had pupils. Dr. Castelli himself, however, did some tests in my laboratory before I completed my new method. The Wassermann reactions reported by him have been done, I believe, largely with the titrated amboceptor and antigen which I furnished. A number of other physicians, who have worked with me over a period of several months, have learned not merely the procedure employed in doing the Wassermann and my own method of the fixation test, but also the principles of hemolysis, and the method of preparing the antigen, amboceptor, and complement, but are, I feel justified in considering, capable of carrying out the serodiagnosis of syphilis in a reliable manner.

In my opinion forty cases are hardly enough to base any final conclusion on. Besides, the slight discrepancy between the results obtained by Dr. Castelli and those by me may also be ascribed to the individual differences. I doubt whether Dr. Sachs would have obtained a better agreement of the results if he had sent these specimens to two different persons employing the same method. That my system is more sensitive than the Wassermann is, however, clear from my own comparative study on 244 cases, but there is no undue sensitiveness in the system.

I had perfected my system before Tschernogubow's article appeared, and I may point out that Tschernogubow's method is fundamentally incorrect in its principles. Not one case has been reported by him and he has now another method in which he proposes to use guinea-pigs' washed corpuscles.

Concerning Dr. Herzog's warning of the danger of abuse of the reaction on account of simplification, there can be no more danger in this than in the difficult Wassermann test, so long as both are to be carried out by trained workers only. The simplification removes the difficulties for these qualified workers, and offers a better opportunity to untrained men to become qualified within a shorter period. There is no guarantee that the difficulties in the Wassermann method will necessarily bar unqualified workers.

Clinical Notes

TWO CASES OF TUBERCULOUS INFECTION OF THE PERITONEUM

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These cases illustrate unusual phases of intraperitoneal tuberculosis, and serve also to draw attention to certain points in the natural history of this disease which do not appear to have received sufficient notice at the hands of systematic writers.

HYPERTROPHIC APPENDICITIS OF TUBERCULOUS ORIGIN

CASE 1.—*History*.—S. R., boy aged 10, had had numerous previous attacks of appendicular colic, and a history of "not feeling well" for one month, with the present acute attack of three days' duration.

Examination.—Patient was rather pale and emaciated; pain, vomiting, constipation, tense rectus, indistinct tumor at McBurney's point. Afternoon temperature, 102 F.; leucocytosis, 20,000.

Operation.—Incision over tumor revealed an old chronic appendix of such enormous thickness that it was taken at first for a loop of small intestine. The abdomen contained some clear fluid. The appendix was surrounded by dense adhesions protecting several perforations, and on removal measured irregularly 3.5 cm. (1½ in.) in diameter by 12 cm. (5 in.) in length. At its point of origin from the bowel it was of normal caliber. Section showed it to be composed of dense fibrous tissue, surrounding numerous cheesy foci and tubercular granulations. The perforations were apparently not due to pressure necrosis, but to a slow extension of the tuberculous process entirely through the wall of the tube. The raw surfaces left after removing the appendix oozed so freely that gauze drainage was introduced.

Subsequent History.—This represents a slow, but complete and natural recovery from a tuberculous infection, after surgical removal of the major focus. The patient remained under daily observation for twelve weeks; during this time there was a temperature range from 98 F. in the morning to 102 F. in the afternoon, with night sweats. The urine showed constantly a large amount of indican, but no sugar or albumin. The leucocyte count varied for many weeks from 27,000 to 48,000, but the percentage of polymorphonuclear leucocytes was never far from normal. After eight weeks the wound closed, but the temperature and blood count remained so high and the obstructive symptoms were so suggestive that in the tenth week the incision was reopened in the expectation of finding a subphrenic or mesenteric abscess. Nothing was found beyond numerous adhesions and ropes of knotted omentum, which were partially resected and broken up; otherwise, the intraabdominal conditions were very satisfactory, and the wound was closed after freshening all muscular edges to insure protection against subsequent incisional hernia. The second operation had little effect on the progress of the case, except to relieve the partial obstruction; the temperature slowly subsided; the appetite, strength and flesh returned; and for over four years the patient has been to all appearances in the best of health.

COMMENT

This very unusual appendix was the product of an effort to accomplish the inclusion of certain tuberculous foci within a zone of resistance and protection. Undoubtedly the process was over-developed, and resulted in a general fibrous hypertrophy of the entire organ.¹ Hypertrophic appendicitis is of two varieties: (1) a form based on obstruction, in which the muscle fiber is increased through the stimulus of resistance to peristaltic action at the point of obstruction; and (2) a form in which diseased foci are surrounded by protective zones—more or less coalescent—of granulation and fibrous tissue. More commonly the diseased focus originates in a foreign body, but in rare instances, like the present, the irritating material from which exclusion is sought is represented by colonies of the *Bacillus tuberculosis*.

The important clinical points to be noted are: (a) That in spite of the chronic process the onset was apparently sudden, so far as the call for medical aid was concerned; (b) that the case prior to operation gave little hint of the tuberculous source of the trouble; (c) the long-continued postoperative temperature and phenomenally high leucocytosis were incorrectly inferred to represent further mixed infection with abscess formation. In reality they represented a virile and eventually successful resistance to such of the tuberculous material as remained active within the peritoneum after the removal of the principal deposit.

Safe general rules to deduce from this case are: (1) A sharp rise in temperature and leucocyte count, after operations for tuberculous conditions, indicates vigorous resistance, and, other things being equal, should influ-

ence a favorable prognosis. (2) Secondary operations, in tubercular cases, unless for well-defined obstruction, are not indicated on the sole basis of fever or high leucocytosis.

TUBERCULOUS PERITONITIS WITH LARGE PSEUDOCYST, AND CHRONIC OBSTRUCTION

CASE 2.—Illustrating, (a) ascitic form of tuberculous peritonitis with adhesions; recovery after exploratory incisions, followed by (b) encysted deposit communicating with bowel, "tubercular pseudo-cyst."

History.—In 1906, Dr. W. H. Sands of Fairmount, W. Va., made a laparotomy on R. J., an otherwise apparently healthy young woman, aged 22, unmarried and undoubtedly a virgin. He found a miliary tuberculous peritonitis, extensive in character, moderate ascites, and dense fibrous adhesions between intestines and all the pelvic organs. He removed nothing, dusted well with iodoform and closed without drainage. She left the hospital in three weeks. A mucopurulent discharge from the bowel developed and in eight months she was again operated on, this time for obstruction. Prior to Dr. Sands' second operation she was seen by the writer, who can vouch for her apparently desperate condition. She was of a waxy pallor; the bowels were distended and the abdomen very tender; the evening temperature was high; the bowel movements were scanty or mucopurulent, and the patient was allowed to go to her home on the theory that she was fatally ill with peritoneal and intestinal tuberculosis. On reaching home Dr. Sands broke up many of the adhesions, found no evidence of the former miliary tuberculosis, dusted with iodoform and closed. Recovery again was uneventful. In six months Dr. Sands again saw her with several large joints involved in an apparently tuberculous arthritis. At this time there appeared to be some involvement of the lung. No operation. Weight, 105 pounds. On the subsidence of the arthritis she was sent to the mountains where she remained one year. She then returned to Chicago and came to my office to get work as a nurse. She was a picture of exuberant health—plump, ruddy and vigorous. Weight, 130. Within a month she was again taken with symptoms of acute obstruction and her subsequent history is as follows: Temperature, from 100 to 103 F.; tongue clear; nausea and vomiting frequent; constipation obstinate, but not unyielding; abdomen distended, but rigid and tender only below the line of navel; urine dark brown with strong reaction for indican, no albumin; movements contained some mucopus. In lower left quadrant in the region of the sigmoid there was a swelling, round and tender, about the size of an infant's head at term. Blood count: 18,000.

Diagnosis.—Infected cyst; obstruction from combined effect of chronic adhesions and enlarging cyst.

Treatment.—Under hot applications and a starvation diet the symptoms improved for a few days, and there was some reduction in the size of the tumor, coincident with free evacuations from the bowel, containing pus. But presently the temperature again mounted and the patient was taken to the hospital for operation. A median incision through the old scar—which was hernial—opened a smooth non-tuberculous peritoneal sac, containing a little clear fluid, and traversed by numerous bands and layers of old adhesions, obliterating effectually all organs and landmarks. During the subsequent manipulations neither uterus nor ovaries were recognized as such. The excised mass seemed to be an ordinary infected cyst of the right ovary or broad ligament, which had developed in the usual manner but had assumed rather peculiar relations toward the sigmoid colon in consequence of previous tuberculous infection. The tumor was completely wrapped in the sigmoid flexure; the omentum was not encountered during the operation. With great difficulty a line of cleavage was secured along the anterior aspect of the tumor, and the growth was literally dug out of the pelvis. Several small thin-walled cysts, containing clear fluid and lying apparently close against the uterus were also enucleated; these had no connection with the larger tumor except by contiguity. While separating the tumor from the upper part of the rectum, the adhesions were so close that the cyst wall gave way, allowing a quantity of brownish fluid of fecal odor to escape. The

¹ A similar case is reported by Murphy in the *Am. Jour. Obstet.*, 1904, xlix.

raw rectal wall was at once carefully examined, but no bowel opening could be detected, and after closing the opening in the cyst with forceps, the enucleation was completed. There was no hemorrhage from any single large vessel, although the oozing from torn surfaces was profuse. The tumor had been contained in a sort of globular cavity made up of pelvic wall, sigmoid and rectum, bladder and uterus, and there was not the least suggestion of pedicle. The adjacent bowels were then cleaned and examined for perforations, but, although the surfaces were unhealthy and denuded, they presented no macroscopic tubercular nodules and no perforation could be discovered. Three cigarette drains were introduced, two to the depths of the cavity and one to the most suspicious bowel surface, and the abdomen was closed after excising the hernial sac and renewing the normal relations of all the parietal structures to the median line. The operation was followed by great vascular shock and considerable vomiting and distention, but in five days improvement was coincident with the appearance of a fecal fistula, through which escaped, at first, all of the evacuations and large quantities of flatus. Presently, however, the rectum resumed its function, the temperature became continuously normal, the appetite and strength improved, the fecal discharge ceased, and at the present writing conditions point toward a speedy permanent wound healing under occasional treatment of the fistulous tract with Beck's paste. Weight, 124, and increasing.

Examination of Specimen.—Smaller cysts (2 or 3) not preserved, but filled with clear contents; walls unthickened. Contents of large cyst not preserved, but of fecal odor, gray-brown color, not bloody, and about the consistency of butter-milk. Size, prior to rupture, that of an ordinary coconut; after removal, that of a baseball. Outline, irregularly globular; no pedicle; surface rough and fibrous, with no peritoneal surface in evidence. Thickened areas in the wall were later recognized microscopically as tube and ovary. Sac wall, irregularly thickened, fibrous and varying from .5 to 5 cms. (1/5 to 2 in.) in thickness; some soft spots containing blood and pus; a fistulous tract 4 cm. (1½ in.) long, lined with grayish-green membrane and terminating abruptly on inner and outer faces of sac. The interior of the cyst is rough, irregular and gangrenous, and the wall in places peels rather readily into layers.

COMMENT

The original pathologic diagnosis made by the laboratory in this case was pyosalpinx and pelvic abscess. Later Dr. E. R. LeCount, without knowledge of the clinical history, became suspicious of the specimen and took up the microscopic examination himself. After repeated section cutting, he was able to demonstrate:

(a) Many microscopically typical foci of tuberculosis were present with no gross tuberculous degeneration.

(b) The cyst was neither covered nor lined with epithelium or endothelium, and that its wall was made up of layers of organized fibrin and inflammatory cells.

(c) The tube and ovary were incidentally included in the cyst wall, but that they did not form any integral part of the cyst.

(d) The tube and ovary were not themselves tuberculous.

The findings at the first operation were those of the ordinary form of tuberculous peritonitis, probably secondary to intestinal tuberculosis. At the second operation the gross tuberculosis had disappeared, leaving the usual scar-tissue adhesions. At the third operation the pathologic finding was an extremely rare one: a pseudocyst composed of tuberculous inflammatory tissue, probably originating from an encapsulated perforating ulcer of the sigmoid, and fed from time to time with septic material from the bowel.

Such pseudocysts are mere sacculated receptacles for morbid products, and are to be differentiated from true cysts of the genital tract by their lack of true lining and covering membranes, by the

thickness and inelasticity of their walls, and by the wall itself being composed entirely of inflammatory material. Their origin is usually tuberculous. Clinically, these deposits are commonly taken for ordinary pelvic cysts, or for tubo-ovarian abscesses, and there is no possible way to identify them prior to operation, except through inferences drawn from the history.²

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CRURAL AND AXILLARY RINGWORM IN THE CANAL ZONE

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Mention in *THE JOURNAL* of June 26, 1909, of the prevalence of tinea cruris in the temperate zone would seem to make some description of this annoying disease, as seen so commonly in the tropics, of interest. Tinea cruris et axillaris is seen with great frequency among the laborers and lower class of natives in the Canal Zone, and it is by no means uncommon among the natives of the North resident here. The disease flourishes best among those of uncleanly habits and improper and careless personal hygiene. The practice of this class of persons of washing their clothing in streams and pools and of spreading it on the usually moist ground and grass to dry seems to provide a ready means of infection. The infrequency of change of clothing and of bathing may also be mentioned as predisposing factors.

The disease usually appears first, as the name implies, on the inner side of the groin next the body and in the armpits, rapidly spreading, if neglected, over the scrotum, thighs and trunks. Patients frequently present themselves for treatment who have two-thirds of the body surface affected. There first appears a small reddish area of inflammation with slightly raised edges, these spots gradually spread peripherally till they reach the size of a silver dollar or of the palm of the hand. The inflammation in the center of the "circle" recedes as the periphery enlarges. In neglected cases new areas of infection soon appear in the near vicinity and as they enlarge the rings coalesce, forming one large infected area of joining rings. The intense itching, especially at night, makes this disease most annoying and often causes badly infected sores and ulcers as a result of lacerations by the finger nails in an effort to find relief. The tinea cruris et axillaris as seen here does not usually destroy the hair follicles.

The treatment is prophylactic and active. Bathing and changing the underclothing should be practiced at frequent intervals, and all clothing should be thoroughly boiled in the laundry and hung on lines to dry. Effective active treatment will be obtained by cleaning the parts thoroughly with the tincture of green soap and water and applying with some friction the ointments of sulphur or salicylic acid or iodine, this procedure to be repeated once or twice daily for several days, or when comparatively small areas are involved and the individual is of sufficient hardihood to stand the few moments of severe burning, a thorough painting with the tincture of iodine or a solution of salicylic acid in alcohol and ether will very promptly eradicate the fungus. The latter measures sometimes give rise to a troublesome irritative inflammation that will require for a few days the application of one of the mild ointments, as boric acid or 1 per cent. carbolic acid in petrolatum.

2. Koenig: *Spec. Chir.*, II, 155, 1889.