

the bladder collapses against the prostate, which makes the manipulations more difficult than when the bladder has just recently been drained of its retained contents and is still in a state of comparative paralysis.

When the operation is done in this way, all that is demanded of the sacral anesthetic is that the lifting of the prostate with the attendant traction on the paraprostatic tissues shall be possible without pain. Complete anesthesia of the sacral plexus, therefore, is not necessary. The actual sensation from the field of operation is blocked with certainty by the prostatic infiltration made through the suprapubic wound. When it is done in this manner, the operator always has it in his power to extend the anesthesia in any direction in which he may find it deficient.

The only untoward effect I have ever noted in sacral anesthesia is the temporary anesthetization of the sciatic nerves. For any operation which requires a subsequent recumbent attitude, this is inconsequential. It is only in cystoscopy when the patient desires to go about his business at once that such results are embarrassing. I have noted this condition only after novocain. Since the effect of this drug disappears in a few hours, the disability can never be of consequence. After quinin, numbness is sometimes complained of; but I have never seen paralysis sufficient to interfere with locomotion.

Quinin and urea hydrochlorid may be used with satisfaction in all stages of this operation. Since novocain is no longer on the market, operators may be compelled to learn the quinin technic.

The plan described above enables the operator to approach the enucleation of the prostate with the certainty that the patient will not be caused pain and that a resort to general anesthesia will most certainly not be required.

Infection in Typhoid.—Contact infection is the most common mode in the distribution of typhoid. Different students of epidemiology in widely distant lands agree in this and even go so far as to place practically the same estimate on the number of cases originating in this manner. About 60 per cent. of all cases of typhoid are believed to be due to contact infection. The board of medical officers in 1898 placed the percentage of contact cases at 62.80, while Drigalski gives it for Germany as 64.7. These conclusions seem to have been reached quite independently, inasmuch as the German makes no mention of the American studies which were conducted nine years before his. Formerly, it was supposed that typhoid is mostly water-borne; the board of officers began their investigations possessed fully of this view, but their studies convinced them that this is an error and first furnished indisputable evidence that contact is the most important factor in the distribution of typhoid.—Vaughan.

CASE OF COCCIDIOIDAL GRANULOMA *

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The following case is unusual and interesting in that it adds some features to the data of a disease which may still be considered rare. As far as we have learned, it is the first reported case observed in the state of Missouri. It is one of not more than three cases which did not originate in the San Joaquin Valley, Calif. Other features, such as the evident symmetrical location of the lesions in the muscles, the continuous fever, and the unusually high leukocyte count, are of especial interest.

In all, about forty cases of coccidioidal granuloma have been reported in the literature. Dickson¹ states that thirty-five of these patients have been residents of California; three have visited the state. This is the third instance, so far as we know, in which the patient has never been in California. The first case came under the observation of Posadas in Buenos Aires, and was described by Wernicke² in 1891 and later discussed by Posadas³ in 1900.

The true nature of the organism was made known by Ophüls⁴ and Wolbach,⁵ who demonstrated that this is not a protozoan disease but is due to a yeast organism closely related to the blastomyces. Since that time numerous papers on this subject have appeared, most of them in the nature of clinical reports.

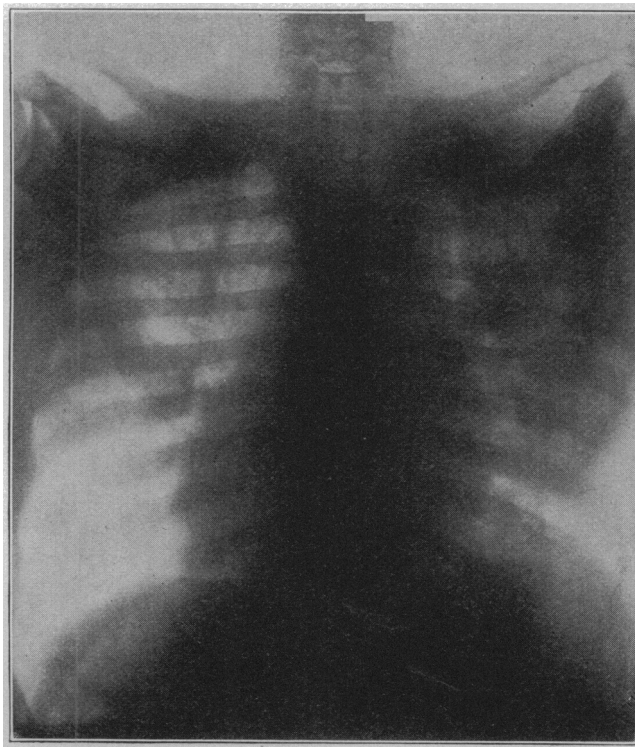


Fig. 1.—Roentgenogram showing extensive pulmonary involvement.

CASE REPORT

History.—N. T., negro, man, aged 28, single, sleeping car porter, entered the hospital, July 19, 1915. The patient was able to walk when he entered the hospital. A tentative diagnosis of early pulmonary tuberculosis was made. He complained of a cough, loss of weight, and general weakness.

The patient's family history was negative. He was born in Kentucky and lived there until the age of 6, when his family moved to Tennessee. Later he lived in Cairo, Ill. He moved to St. Louis in 1909. Up to this time he worked as a farm hand and as a hotel porter. Since 1909, he had been a porter on the Missouri Pacific Railroad, running

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1. Dickson, E. C.: Oidiomycosis in California, with Especial Reference to Coccidioidal Granuloma, *Arch. Int. Med.*, December, 1915, p. 1028.

2. Wernicke: *Jour. de microg.*, 1891, xv, 14; *Centralbl. f. Bakteriol.*, 1892, xii, 861.

3. Posadas: *Rev. de chir.*, 1900, xxi, 277.

4. Ophüls, W.: Further Observations on a Pathogenic Mold, *Jour. Exper. Med.*, 1904, vi, 443.

5. Wolbach, S. B.: Notes from the Life-Cycle of the Organism of Dermatitis Coccidioides, *Jour. Med. Research*, December, 1904, p. 53.

between St. Louis and Denver. He had never been in California.

Aside from being a rather heavy smoker he denied having any bad habits, and appeared to be considerably superior to the average of his race.

The patient gave a history of typhoid fever in 1898, running a mild course. He had "malaria" five years ago. Two years ago he had a rather severe attack of tonsillitis; about ten years ago he had gonorrhoea; and a sore on the penis seven years ago, but he gave no history of secondaries.

His present illness began three weeks previous to his entrance to the hospital. The patient believed he had "caught cold." He had coryza, hoarseness and a cough. Though he felt better a few days later, his cough and hoarseness remained. At the onset the cough was not productive, but later he expectorated a profuse, frothy, watery sputum. He lost about 10 pounds in three weeks, and always felt feverish in the evening.

Physical Examination.—The man was well developed, well nourished, and apparently in good general condition. The tonsils were enlarged and injected, and the pillars of the fauces slightly inflamed. The heart findings were negative. The respiratory sounds were slightly increased in pitch posteriorly over the right side, medial to the scapula. The abdominal examination proved negative, and neither the spleen nor the liver was palpable. The inguinal and epitrochlear glands were moderately enlarged and palpable on both sides. The temperature was 100 F., and the pulse 100, the respiration 28 at the time of entrance.

Course of Disease.—During his first few days in the hospital the progress of the disease suggested an infection of the upper respiratory tract. A culture from the throat was negative for diphtheria. The first six days the temperature reached normal a few times, but from then on the fever became continuous, never again reaching normal. July 30, a 2+ Wassermann reaction was obtained from the blood; Widal and blood cultures both negative. August 1, the patient called our attention to painful nodules in the calves of the legs. One nodule was found in each calf. It was slightly tender, hard, about the size of a hazelnut, and apparently situated in the gastrocnemius muscle. Following this observation new nodules appeared each day, and by August 10, thirteen in all were palpable. These were both subcutaneous and in the muscles, distributed over the front of the chest, abdomen, forearms, thighs and legs. They varied from the size of a pea to that of a hickory nut. At this time we attempted to remove a nodule from one of the pectoral muscles, but punctured it and found what appeared to be an abscess containing a slightly sanguineous, opaque fluid. In addition to many polymorphonuclear leukocytes, double contoured round bodies were found in the smears. On the same day the sputum disclosed similar bodies in large numbers. The lungs now revealed dulness on percussion over the right middle and lower lobes posteriorly, bronchovesicular breathing and subcrepitant râles, the lung picture suggesting a bronchopneumonia.

August 13, two nodes were removed from the left gastrocnemius muscle. Each node contained an abscess similar to the first one examined. Double contoured bodies were again found. The pulmonary findings were more pronounced by this time. Tubular breathing was heard posteriorly over the right base, and dulness was more marked. While a fluoroscopic examination of the lungs, at entrance, was practically negative, a roentgenogram now showed extensive con-

solidation of a large part of the right lung and much generalized mottling (Fig. 1).

The patient now rapidly grew worse; his respiration became more frequent and labored, and his appearance more toxic. His mind remained clear until shortly before his death, which occurred August 20, thirty-one days after his admission, and about fifty-two days after the onset of the disease.

In the beginning his temperature was intermittent until about the seventh day after entrance, rising as high as 101.5 F. It then became continuous, the highest point being 102 in the morning and 101 in the evening. It was interesting to note that there was a morning rise for two weeks, after which the reverse was noticed. Following this, the temperature oscillated between 103.5 and 100; it finally rose to 105.5 on the twenty-fourth day, with a morning remission to 103.5, after which it gradually declined, and at the time of death reached 99.5.

The patient entered with a pulse of 100. For twenty days the pulse rate varied between 80 and 105, following the temperature curve. From then to the time of the highest temperature it rose in frequency to 168 per minute. Then it continued to follow the temperature curve. The systolic blood pressure averaged about 130 mm. of mercury.

The respiratory rate varied between 20 and 35 during the first three weeks. It then gradually increased in rapidity, and reached its greatest frequency, 80 per minute, a day before death.

It was most unfortunate that a necropsy could not be obtained.

Treatment.—At the onset the treatment was symptomatic. When the Wassermann test was found positive, potassium iodid was given by mouth, and mercury by intramuscular injection. The mercurial treatment was discontinued at the end of eight days, but 45 grains of potassium iodid were administered three times daily, and later increased to 60 grains until the sixteenth day, when it was discontinued. Following this, copper sulphate, one-fourth grain, was given three times daily for four days. The potassium iodid and mercury appeared to have no influence on his condition and were, therefore, discontinued. The copper sulphate proved irritating to the gastro-intestinal tract.

Laboratory Findings.—Blood:

July 27: Erythrocytes, 4,800,000; leukocytes, 12,000; hemoglobin, 85 per cent. Differential count: Polymorphonuclears, 74 per cent.; small lymphocytes, 10 per cent.; large lymphocytes, 6 per cent.; eosinophils, 6 per cent.; transitionals, 4 per cent.

August 6: Differential count: Polymorphonuclears, 70 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 4 per cent.; eosinophils, 2 per cent.; transitionals, 2 per cent.; basophils, 2 per cent.

August 8: Erythrocytes, 3,000,600; leukocytes, 12,600; hemoglobin, 65 per cent. Differential count: Polymorphonuclears, 58 per cent.; small lymphocytes, 15 per cent.; large lymphocytes, 16 per cent.; eosinophils, 6 per cent.; transitionals, 3 per cent.; basophils, 3 per cent.

August 12: Erythrocytes, 3,860,000; leukocytes, 21,500; hemoglobin, 75 per cent. Differential count: Polymorphonuclears, 72 per cent.; small lymphocytes, 17 per cent.; large lymphocytes, 6 per cent.; eosinophils, 2 per cent.; transitionals, 3 per cent.

August 16: Leukocytes, 29,000.

August 17: Leukocytes, 31,200. Differential count: Polymorphonuclears, 80 per cent.; small lymphocytes, 16 per cent.; large lymphocytes, 2 per cent.; transitionals, 2 per cent.

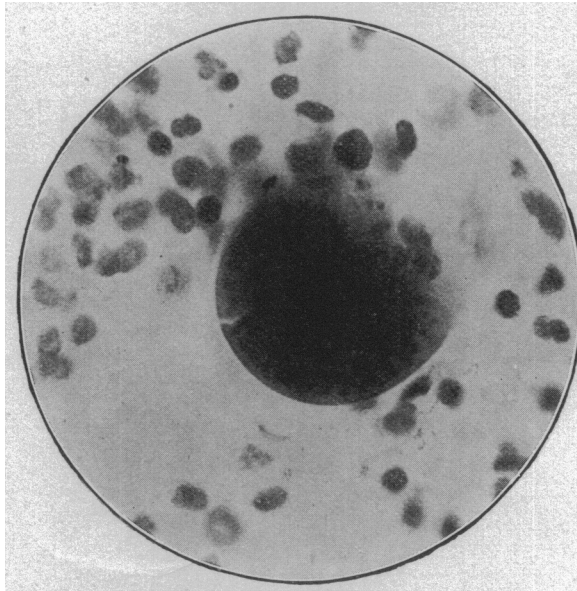


Fig. 2.—Large coccidioidal organism in sputum filled with endospores and in the process of rupturing; X about 1,500.

August 18: Leukocytes, 32,400; numerous myelocytes appeared.

August 20: Leukocytes, 62,400 on day of death.

Urine: This was negative on entrance. August 10, a trace of albumin appeared. Later this increased somewhat, and a few hyaline and granular casts were found.

Sputum: Macroscopically this was always light colored, frothy, and contained large quantities of mucus. Small, flaky particles were suspended in this mucus. Microscopically it had the appearance of ordinary sputum, but in addition contained the aforementioned double contoured bodies. These organisms were easily demonstrated by mixing the sputum with a 4 per cent. potassium hydroxid solution. They varied in size from 3 to 50 microns, and were always circular with a distinct double refractile cell membrane, varying in thickness according to the size of the organism. No budding types were observed, but many organisms containing endospores were found. Some were seen in the process of rupturing and others were empty (Fig. 2). The sputum was repeatedly stained for tubercle bacilli with negative results, but in this process the cell membranes of the coccidioidal organism were found to be acid fast, making a marked contrast to the rest of the blue field. Evidently only a small number of fully developed forms took the stain, for far greater numbers were found by the potassium hydroxid method.

Sections from the nodules excised from the calf muscles, August 13, had the appearance of tuberculous granulomatous tissue. Numerous giant cells were found. Typical double contoured bodies of various sizes, similar in every respect to those observed in the sputum and in the abscesses, were noted within the giant cells as well as outside of them (Fig. 3). No budding forms were discovered after painstaking search.

A nodule was submitted to Dr. Charles Klenk for bacteriologic examination. Cultures were made by him on glycerin and plain agar and in bouillon and grown at 30 C. (86 F.). Within twenty-four hours a profuse, homogeneous, grayish-white growth almost completely covered the solid medium. As the cultures became older, aerial hyphae were apparent at the edges. Microscopically, the growth consisted of branching mycelial threads with club shaped endings. At the bottom of the bouillon culture, after about a week, flaky globular bodies about the size of a small cherry and covered with fine villuslike projections were found, waving in the medium. The bacteriologic findings agreed absolutely with those described by Wolbach,⁵ Ophüls⁴ and others. Material from an agar slant was

injected into the back of a guinea-pig intradermally. A nodule developed and increased gradually in size until at the end of three weeks it was as large as a small walnut. It fluctuated and involved the skin and subcutaneous tissue. This tissue was removed under aseptic precautions. Sections revealed numerous double contoured bodies (Fig. 4), similar in all respects to those found in the original tissue. Cultures were identical with those from the patient's nodules.

From the clinical and pathologic findings this can readily be classified as an undoubted case of coccidioidal granuloma.

COMMENT

While this case is similar in most respects to those previously reported, it is different to the extent that its duration was shorter than that of any case we have found reported in the literature.

While most of the other cases were characterized by an irregular temperature and a very moderate leukocytosis, here we had a high, sustained fever and a marked leukocytosis.

As the disease progressed, the nodules grew smaller, and a walling-off process appeared to take place. This would tend to show that some healthy reaction was going on in the region of these focal lesions. At the same time, however, the pulmonary involvement progressed rapidly, taking on the characteristics of an active bronchopneumonia, and was most probably an active factor in the fatal termination.

This condition, both clinically and pathologically, closely simulates tuberculosis in many respects.

Coccidioidal granuloma appears to be more rapidly fatal than systemic blastomycosis. In our case,

the treatment recommended for blastomycosis was of no avail.

Excepting for one or two cases reported to have been treated successfully by surgical measures, such as early amputation, this disease does not appear to be amenable to any form of treatment.

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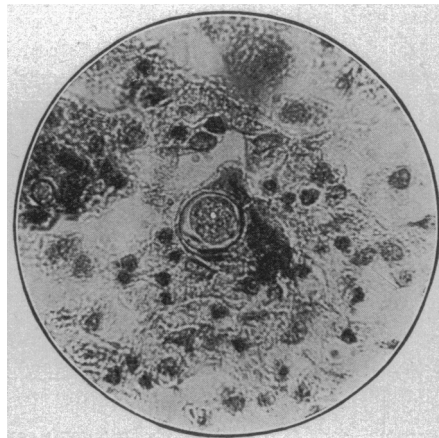


Fig. 3.—Double contoured body in granulomatous tissue from excised nodule; $\times 1,000$.

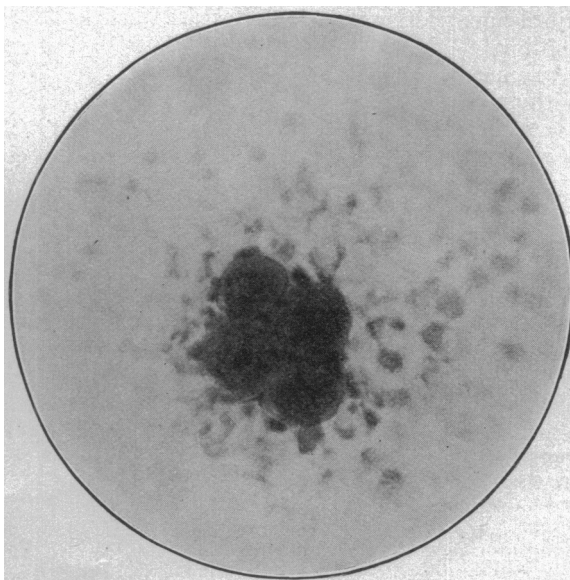


Fig. 4.—Pus from abscess in nodule excised from guinea-pig; $\times 1,000$.

Memorial to Finlay.—A bust of Dr. Charles J. Finlay was unveiled recently at the central headquarters of the national public health department at Havana, Cuba. He first suggested the possibility of the propagation of yellow fever by means of the mosquito. This was in 1881, and for twenty years he strove to convert others to this theory but without success, no scientific authority accepting the insect transmission of disease until the American Commission established the fact beyond question in 1901. The memorial has been erected by subscriptions from the physicians, pharmacists, veterinarians and nurses of Cuba and the officials of the Cuban national public health department. After paying over \$2,500 for the bust, a surplus was left of over \$1,000, which was presented to Finlay's widow. The French Académie

des Sciences divided the Bréant prize between Finlay and Agramonte a few years ago, and their names have been proposed as candidates for the Nobel prize in medicine. The organization of the national public health department is largely Dr. Finlay's work. He succeeded Dr. Gorgas as chief health officer of Cuba in 1902. Finlay was a native of Cuba, but studied medicine at Jefferson Medical College, Philadelphia. His chief articles in support of mosquito transmission of yellow fever appeared in 1886 and in 1894, and he waited patiently and with confidence for the world to accept his views.