lesions sufficiently grave to have caused death. The anatomic diagnosis of tuberculosis not being confirmed on examination of sections, save in peribronchial lymph-nodes.

The parasite, as studied from smears, presents certain resemblances to those found by Leishman, Donovan, Marchand, Ledingham and Wright, but the differences are so marked and the lesions so unusual that I feel the case is a unique one.¹

For the parasite the name *Histoplasma capsulata* is proposed.

I wish to thank Acting Chief Sanitary Officer Dr. H. R. Carter for his kind permission to publish this report.

A MODIFICATION OF GOCHT'S COMPRESSION DIAPHRAGM.*

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Shortly after he had presented his first paper on *x*-rays to the physiomedical society at Würzburg, Roentgen found that *x*-

Modified compression diaphragm.

rays do not emanate from the platinum of the anti-cathode only, but also from the walls of the glass tube, from the air which the rays penetrate, in fact that they fill every space in the room in which the Roentgen tube is operating. These secondary rays, as they are called, or diffused rays, as they should be called, affect the sensitized plate, and the blurred and flat negatives which we so often see must be ascribed to these unwelcome secondary rays.

Roentgen himself recommended lead diaphragms to be put between tube and body to annihilate the effect of the secondary rays, and an American investigator, Charles Finley Easton, was the first (1896) to cover his tubes with a lead shell into which a changeable opening was made. Rumpel, in Hamburg, covers the body with thick lead plates, except the region which

is to be Roentgenographed. Walter, in Hamburg, constructed a box made of lead, Levy in Berlin, Gocht in Halle, and many others have made original and valuable inventions in this field, but no one was so successful as Albers-Schönberg, in Hamburg, who constructed an apparatus which enabled him to exclude the secondary rays almost completely, and at the same time to reduce the thickness of the body as much as the patient could endure.

Unfortunately, this compression diaphragm of Albers-Schönberg is a very complicated mechanism, besides being so high in price that only a few operators are able to add it to their Roentgen instrumentarium.

Gocht has endeavored to simplify the apparatus, but his arrangement has added greatly to the weight of the instrument so that it is unhandy. I have taken up Gocht's idea and devised an apparatus (see illustration) as follows: A heavy board (A), covered on both sides with lead sheet, has in the center an opening in which two brass cylinders (B), lined inside with lead foil and of the same dimensions as the original Albers-Schönberg tubes, can be tightly inserted. The upper aperture of the cylinder is covered with lead diaphragms (C) of different sizes, while the rim of the lower aperture is covered with a heavy rubber ring (D). On the wooden board are two uprights (E), erected at such a distance from each other that a seven-inch tube can be supported so that the focus of the platinum target falls exactly in a vertical line drawn through the middle of the cylinder, and thus only the most effective rays are allowed to penetrate the body.

As I am working only with seven-inch tubes I had these uprights made steady. Of course, they can be made sliding so that a tube of any size can be used. If an operator is very anxious to avoid any evil effect on his own body these uprights can be connected with lead glass, but I think this is unnecessary.

The whole apparatus is firmly attached to an ordinary camera table, which, by a system of cog wheels, can be raised and lowered at will. As the table runs on castors, which can be arrested by a small lever-break, the whole apparatus can be easily transported to any part of the room. At the same time it can be made stable while in use. The apparatus combines cheapness with effectiveness.

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CASE OF CHRONIC SUPPURATIVE ETHMOIDITIS, SARCOMA OF RIGHT TEMPOROSPHENOIDAL LOBE, WITH MISLEADING SYMPTOMS.*

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On account of the extensive and serious pathologic condition, involving vital structures and very confusing and misleading symptoms, the following case is considered of sufficient interest for discussion:

Patient.—On Dec. 7, 1905, J. J. H., aged 51, was brought to me by Dr. E. V. Seay, of Salvisa, Ky., with the following history: He had been troubled for many years with nasal catarrh; at times large quantities of pus would discharge from nose, and this would be followed by great relief for some days or weeks. Six months previously he had a prolonged attack of malarial fever. Two weeks ago he began suffering excruciating pains in frontal region between the eyes, pain being aggravated by jarring the bed or when in a stooping position. He suffered greatly from nausea, mental depression and insomnia.

Examination.—His gait was unsteady, inclining to the right as he walked across the room. Skin was of muddy, septic appearance; right eye protruding and moved sluggishly. Very slight pressure or tapping over frontal sinus or at inner canthus gave rise to acute pain. The right nares was filled with mass of bluish red granulations, through which pus exuded. There was no evidence of the middle turbinates. The left nares

1. Since writing this article I have found the parasite in a second case.

* Presented at a meeting of the Chicago Surgical Society.

* Read before the Eastern Section American Laryngological, Rhinological and Otolological Society at Syracuse, N. Y.

was much congested, but otherwise normal. Transillumination of the maxillary and frontal sinus was positive on right side. Ophthalmoscopic examination showed nothing abnormal in the fundus. The pulse was slow and full; articulation difficult and mind sluggish. He insisted that nothing was wrong but right side of his head. The tongue was heavily coated and breath foul. Blood count showed leucocytes of 19,000.

Diagnosis.—He was sent to the hospital and Drs. G. P. Sprague, F. H. Clarke and J. Estell saw him in consultation. All agreed on diagnosis of chronic suppurative sinusitis, with probable meningeal involvement of right temporofrontal base in purulent inflammation. The apparent aphasia at that time was thought to be due to stupor.

Course of Disease.—The urine was scant, loaded with indican and contained some albumin. A large dose of calomel and salol was given, followed by castor oil 3j and salts 3ss in six and eight hours alternately. He had a good night's sleep after taking 15 gr. each of salicylate and bromid of strontium. Patient was purged freely. Nasal irrigation followed by application of adrenalin solution gave some relief to pain, and breakfast was eaten with apparent relish. Two hours after eating he complained of increased pain, yawning and gaping constantly while awake. There was distinct aphasia—he is right-handed—with very frequent slight convulsions of the right hand and arm, and tongue deviates to the right. Constant pain is referred entirely to the right fronto-orbital region. A brain tumor of the left side was thought probable by one of the consultants. Late in the afternoon of December 8 symptoms of brain pressure came on. There was deep stupor and more bulging of the right eye. After consultation it was decided to operate at once.

Operation.—Patient was etherized without difficulty or excitement, pulse and respiration being improved by the anesthetic. I made the usual incision for entering the frontal sinus after Killian's method. The sinus was found free from granulations or pus, but the lining membrane was greatly thickened and congested and of a very dark bluish color. The nasofrontal duct was completely blocked by firm granulations, which, when removed, showed a completely degenerated ethmoid, having the appearance of polypoid degeneration so frequently seen. The whole of this was removed with curette and forceps. The maxillary sinus was found to be blocked by firm tissue, which I supposed to be polypi and granulations. To facilitate the removal of this, the sinus was entered through the canine fossa, and very offensive pus and firm granular tissue removed, which had the appearance of sarcoma. The nasal wall and floor of the orbit was involved in the process of necrosis. After completely cleaning out as far as possible all pathologic tissue and thoroughly cleaning the parts, the usual gauze packing and dressing was applied and patient put to bed in good condition. Duration of operation was one hour and twenty minutes. One hour after the operation patient was conscious, with normal temperature and pulse.

At 8 a. m. the following morning, ten and a half hours after the operation, pulse and temperature were normal, mind was clear, there was no pain, and no hesitancy in speech. Patient censured me for not operating on him sooner. He was thirsty and hungry, and there being no nausea a cup of coffee and a slice of toast were given, which he ate with a relish. These symptoms continued until 9:45 p. m. (twenty-four hours after the operation) when alternate stupor and restlessness came on, followed by yawning and grinding of teeth, and extreme restlessness. This condition increased until his death, thirty-one hours after the operation. There was no return of intense pain and no complete loss of consciousness, notwithstanding the deep stupor, until a few moments before his death, which came without a tremor.

Autopsy.—Four hours after death the autopsy was held by Dr. Julian Estell in the presence of Dr. Sprague and myself, and the report of the latter from a neurologic and the former from a pathologic standpoint is given.

DR. SPRAGUE'S REPORT.

"I saw Mr. J. J. H. at the Good Samaritan Hospital December 8, at 11:30 a. m. At that time he was very feeble, the skin was sallow, mouth and eyes were dry, and tongue covered with dense, dry brown coat. His pulse was 55 and

respiration 15. The pupils were equal, moderately contracted, and reacted slowly to light and accommodation. Because of his weakened condition, his other reflexes were not tested. His mind was very sluggish, and he would lapse into unconsciousness while answering questions, but he complained of very severe pain under the right eye, and of severe but vaguely outlined pain over right frontal region. He insisted that he had no pain elsewhere, but was too nearly stuporous to discuss his condition further. There were no focal symptoms, although a slurred articulation and the occasional loss of a word suggested aphasia more than stupor.

He was operated on that night and I saw him again at noon December 9, at which time he was rather less dull than before the operation, but gave such irrelevant answers to questions that no statements could be gotten from him. His tongue, at the time, deviated to the right, and the right hand and arm were slightly convulsed every minute or less. He located the pain as before, but said it was less severe. His articulation was more impaired, and the aphasia, deviation of the tongue, and tremor of the right arm suggested disease in the third frontal and anterior central convolutions of the left side.

"At the autopsy, four hours after his death, December 11, part of the third frontal convolution and the lower part of the anterior central convolution of the right side were discolored from light red to nearly black from hemorrhages. A very small part of the region mentioned appeared normal, but most of it was more dense than normal. On section it gave the impression of being fibrous. The ventricular fluid was slightly in excess of normal, and of a clear, blood-tinged color. There was no involvement posterior to or below the fissures, and no disease as far as could be determined by naked eye examination in any other part of the brain. His son stated that he was right-handed."

DR. ESTELL'S REPORT.

"Skull cap was removed. Right temporosphenoidal lobe of brain was adherent to floor of middle fossa. Slight adhesions along vertex of longitudinal fissure extending about two inches in front and behind fissure of Rolando and down about one inch over cortex. Whole of right temporosphenoidal lobe of a red gray mottled color and meninges adherent over base of the lobe.

On section the lobe seemed entirely replaced by an encapsulated mottled red and gray mass of semi-solid, pasty consistency. Closer inspection showed trabeculae of firmer fibrous like bands running through the mass with soft pasty, dark red gummy material in the spaces, giving an alveolar structure to the mass. The tumor gave the gross appearance of an 'infected sarcoma.' Tumor was examined microscopically and proved to be sarcoma, both small round and small spindle cells being found. The whole tumor was far advanced in process of degeneration, and showed evidence both of inflammatory infiltration and necrosis, the indication being that the infection had extended from the nasal accessory sinuses."

I have reported this case as briefly as possible without omitting important detail, although every hour the patient was under my care was filled with more or less interesting and peculiar symptoms. From the time I saw him until within four hours of his death, the temperature, pulse and respiration were recorded every three hours. The temperature varied from 96 to 98 F., pulse 56 to 68, respirations 15 to 19. Four hours before he died the temperature rose to 103, pulse 120, respirations 21.

Some of the most interesting points to me, and those selected for discussion, are (1) relation of cause and effect—was the cerebral condition the result of sinus condition or *vice versa*? (2) The confusing and misleading symptoms indicating pressure in left side of the brain. (3) Could general intracranial pressure exist without producing a motor symptom referable to right-sided pressure. (4) What would have been the probable result if the sinus disease had been eradicated months before?