

tissue, etc. The organism has been found in the uterus, tubes, and ovaries.

## REPORT OF CASE

Mrs. D. M., age 49, was first seen by one of us on May 11, 1937. At that time she complained of a painful swelling in her back in the region of the sacrum. This had first appeared in October, 1936, accompanied by practically no pain and little febrile reaction. This original swelling had persisted about two months, and then disappeared almost completely. It reappeared about four months later and gradually extended outward over the right hip. One week before being seen the lesion pointed on the lateral surface of the right ilium. About 500 cubic centimeters of purulent material had drained from the lesion. Past history showed that some swelling and tenderness had occurred in the right inguinal glands a few months prior to the time the swelling appeared in the back.

*Physical examination* showed a moderately well nourished female. No pathology was found in the head, neck, or chest. All the teeth had been removed. No abdominal tenderness was present nor were any masses palpable. Examination of the area referred to previously showed a sinus opening over the lateral surface of the right iliac crest with a line of induration running backward to the lumbosacral area. Pelvic examination showed the viscera to be normal in size and position. No tenderness was present. Smears from the vagina were positive for actinomycetes. This was verified by the clinical laboratory. X-rays of the pelvis revealed an old ankylosed arthritis, involving the third, fourth, and fifth lumbar vertebrae and upper sacrum, apparently nonactive at the present time. Laboratory examination showed the following: white blood cells, 13,000; small lymphocytes, 16 per cent; monocytes, 5 per cent; eosinophils, 2 per cent; neutrophils, 77 per cent, of which 5 per cent were stabs; red blood cells, 4,480,000; hemoglobin, 75 per cent. Blood Wassermann was negative. Urinalysis showed only a trace of albumin.

*A working diagnosis was made:* "Deep abscess, etiology undetermined."

*Treatment.*—On June 17, 1937, the patient was taken to surgery and, under a general anesthetic, the abscess was opened and explored. The abscess and accompanying sinus tract extended from a point above the anterior crest of the right ilium back to the lumbar spine. There was no evidence of bone involvement. Many ramifications were present, some of which extended down to, but not through the peritoneum. Cultures were taken and sent to the laboratory. The tract was cleaned and packed with vaselin gauze.

Recovery from the operation was uneventful. The laboratory report on the smears was positive for actinomycotic granules. Postoperative treatment consisted of packing the tract regularly with vaselin gauze and exposing the unhealed areas to ultra-violet rays. Potassium iodid was given during the entire convalescence, the dosage being maintained at maximum tolerance. Because of the depth of the tract and the nature of the causative agent, healing was of necessity slow. On June 20, 1938, the patient was discharged, completely cured.

## COMMENT

Apparently, the focus of the infection was the vagina, with extension to the inguinal glands and then the back. The causative organism we believe to be actinomycetes.

## IN CONCLUSION

We feel that this case is of interest for the following reasons: First, the actinomycotic infection apparently extended from the vagina through the inguinal glands, forming the sinus tract that ultimately resulted in abscess formation. Second, complete healing of these deeply infected areas is unusual—so often we find sinus tracts remaining. Third, we feel that we were definitely able to determine the original location of the causative agent.

Medico-Dental Building.

CHANCROIDAL BUBO CURED BY  
SULFANILAMIDE

By J. F. DOUGHTY, M. D.

Tracy

MR. M. H., age 22, noted a "sore" on the glans penis about one week after intercourse. He came under my observation about four days later, at which time there was an ulcerated lesion completely destroying the frenulum, and extending into the superficial tissues of the glans penis. The inguinal glands were slightly enlarged. Darkfield examination for *Spirocheta pallida* was negative. Under treatment with mild antiseptic washes and dressings, the lesions healed very slowly. Two months later, with the lesions still not completely healed, the patient developed large inguinal buboes on the left side. The swelling was the size of a lemon, and there was redness of the skin around the area for a distance of about three inches. The swelling was hard and moderately tender. The patient's temperature was normal, but he felt sick.

Sulfanilamide was administered orally, 20 grains every four hours for four doses, and 10 grains four times daily, to a total of 250 grains. Within twenty-four hours the patient felt considerably better, and recession of the swelling was quite noticeable. At the end of five days the ulcer was entirely healed, and the glands were no larger than small walnuts. They continued to recede. There has been no recurrence.

In this case an ulcerated chancroid, which healed very slowly and developed buboes after two months, responded after the administration of sulfanilamide.

231 West Eleventh Street.

TRICHINA SPIRALIS: ITS INCIDENCE  
IN NECROPSY MATERIAL\*

By E. M. BUTT, M. D.

AND

J. L. LAPEYRE, M. D.

Los Angeles

ROUTINE examinations of human postmortem material for the presence of *Trichina spiralis* have yielded interesting information regarding the incidence of trichinosis. Percentages of infestation, ranging from 3.5 to 27.6, have been reported from widely separated localities. When it is realized that one-third to one-half of these patients probably have had clinical symptoms of the disease, a morbidity figure is obtained that is not only startling, but extremely important to the clinician and public health officials. In the papers of Queen,<sup>1</sup> Hall and Collins,<sup>2</sup> Riley and Scheifley,<sup>3</sup> Hinman,<sup>4</sup> McNaught

\* From the Laboratory of the Santa Fe Coast Lines Hospital, and the Department of Pathology, University of Southern California School of Medicine, Los Angeles.

<sup>1</sup> Queen, F. B.: The Prevalence of Human Infection with *Trichinella Spiralis*, *J. Parasitol.* 18:128 (Dec.), 1931.

<sup>2</sup> Hall, M. C., and Collins, B. J.: I. The Incidence of Trichinosis as Indicated by Postmortem Examinations of Three Hundred Diaphragms, *Pub. Health Rep.*, Vol. 52, No. 16 (April), 1937. II. Some Correlations and Implications in Connection with the Incidence of Trichinae Found in Three Hundred Diaphragms, *Pub. Health Rep.*, Vol. 52, No. 17 (April), 1937.

<sup>3</sup> Riley, W. A., and Scheifley, C. H., *Trichinosis of Man—A Common Infection*, *J. A. M. A.*, 102:1217 (April 14), 1934.

<sup>4</sup> Hinman, E. H.: *Trichiniasis in Louisiana*, New Orleans M. and S. J., 88:445-448 (Jan.), 1936.

TABLE 1

Age	Total Number of Cases	Positive Cases		Per cent Positive		State of Trichina	
		Number	Per Cent	0-50 yrs.	51-100 yrs.	Cysts	Live Worms
10-20	8						
21-30	6						
31-40	25	6	24.0	15.8		3	5
41-50	24	4	16.7			3	1
51-60	40	6	15.0			5	2
61-70	35	8	22.8		19.6	7	1
71-80	25	6	24.0			6	1
81-90	7	1	14.2			1	
Total	170	31	18.2			4 Heavy Infestations 27 Light Infestations	

and Anderson,<sup>5</sup> and Magath,<sup>6</sup> are found complete discussions of the methods used, presentation of the statistics and summaries of the literature.

Inasmuch as no reports of the incidence of trichinae infestation in cadavers have appeared from Southern California, we thought it of interest to record our findings.

METHODS AND RESULTS

This study is based upon the examination of human diaphragms by the digestion method. The method used in digesting the muscle is essentially that described in the article by McNaught and Anderson.<sup>5</sup> The diaphragms were stripped free of fat, weighed, and ground in a meat grinder. Fifty grams of the ground muscle were mixed with 500 cubic centimeters of 0.7 per cent hydrochloric acid, and 1.5 per cent granular pepsin. The mixture was then agitated by means of a mechanical stirring device arranged within an incubator (37 degrees centigrade), and allowed to remain over night. The incubation period varied from fourteen to eighteen hours. The following morning the material was passed through brass mesh sieves, No. 40 and No. 60, and allowed to settle in a large glass funnel, to which was attached a rubber tube closed by a

pinchcock. The filters were rinsed several times with normal saline solution. After allowing the entire mixture to settle for one-half to two hours, small portions of the sediment were drawn off into a petri dish and examined under a microscope equipped with a 35-millimeter objective. Liberated trichinae and cysts were easily identified. In the event no trichinae were found, larger quantities of the sediment and washings from the apparatus were examined.

Diaphragms containing more than one hundred cysts or larvae were considered to be heavily infested. Not more than five to ten trichinae were found in the average case.

The results of the examination of 170 diaphragms are recorded in Tables 1 and 2. It will be noted that 18.2 per cent were found to be infested with either trichinae, cysts, or with both cysts and worms. Four of the thirty-one positive diaphragms were classified as heavily infested, while of the remaining twenty-seven diaphragms only one to ten trichinae were found in each instance.

Fourteen cases in the age groups from ten to thirty years were negative. In the remainder of the cases separated according to age, little variation in infestation was noted.

Further analysis of the data is presented in Table 2. It will be noted that there is a higher percentage of infestation in females than in the males. This is due to the higher incidence of trichinae in colored and Mexican females than in males of the same races. The differences in the percentage of infestation of white males and females are not significant.

Over 95 per cent of the diaphragms used in this study was obtained from the Los Angeles County Hospital. This fact, in addition to the variations in the degree of infestation in the colored and white groups of the series, may have an implication regarding the percentage of infestation in the population at large. The explanation for the higher percentage of positivity in colored and Mexican females, in comparison with the males of the same races, is not apparent. However, it is apparent that less discrimination is practiced by individuals of the latter groups in the selection and preparation of pork products.

It is interesting to point out that none of the past histories of the positive cases contained information upon which to base a diagnosis of trichinosis.

TABLE 2

	Total Number in Group	Number Infested	Per Cent Infested
<b>Males:</b>			
White .....	80	10	12.5
Colored .....	10	3	30.0
Mexican .....	23	4	17.3
Total .....	113	17	15.0
<b>Females:</b>			
White .....	38	4	10.5
Colored .....	7	4	57.1
Mexican .....	12	6	50.0
Total .....	57	14	24.5
<b>Males and Females:</b>			
White .....	118	14	11.8
Colored and Mexican..	52	17	32.6
Total .....	170	31	18.2

<sup>5</sup> McNaught, J. B., and Anderson, E. V.: The Incidence of Trichinosis in San Francisco, J. A. M. A., 107:1446-1448 (Oct. 31), 1936.

<sup>6</sup> Magath, Thomas B.: Encysted Trichinae, Their Incidence in a Private Practice and the Bearing of This on the Interpretation of Diagnostic Tests, J. A. M. A., 108, No. 23 (June 5), 1937.

In the histories in which blood studies were recorded, the eosinophile counts were within normal limits.

It is quite apparent from the foregoing data that trichinosis is as prevalent in Los Angeles as it is in other cities in which surveys of trichinae infestation in cadavers have been made. This information becomes even more startling when the percentages of infestation are transferred from the dead to the living. The droll implication is that nearly one-half million residents of Los Angeles County eat undercooked, infected pork, and carry worms in their muscles.

#### SUMMARY

1. Eighteen and two-tenths per cent of 170 diaphragms examined by the digestion method were found infested by *Trichina spiralis*.

2. The percentage of infestation is much higher in Mexicans and colored people than in the white population.

3. Four of the thirty-one positive diaphragms were found to be heavily infested.

4. A definite clinical history of trichinosis was not found in any of the positive cases.

University Park.

### HUNNER'S ULCER AS AN UNSUSPECTED CAUSE OF GASTRO-INTESTINAL SYMPTOMS

By FRED H. KRUSE, M.D.

AND

WALTER W. HERRMANN, M.D.  
San Francisco

IN 1914 Hunner<sup>1</sup> reported, before the Southern Surgical and Gynecological Association, a series of eight cases having a hitherto undescribed lesion of the urinary bladder. These cases all occurred in women, since his practice was so limited. At the time, however, he predicted that the lesion also occurred in men, and since then this has been reported.

This lesion is characterized by intractable bladder pain, frequency and burning on urination, a low bladder capacity, and paucity of changes in the chemical, microscopic, and bacteriologic study of the urine. The cystoscopic examination, unless carefully done with this lesion in mind, is frequently reported as negative, and half the women in Hunner's group had been subjected to extravasical surgery before the lesion was recognized.

The cystoscopic picture consists of very minute ulcerations through the mucosa, 1 to 5 millimeters in diameter. These are surrounded by radiating, dilated capillaries, and a zone of edema 4 to 5 centimeters in diameter. The ulcerated area bleeds readily if the bladder is overdistended, or is touched by instrument or cotton pledget.

The tissue changes consist of a small zone of epithelial destruction, with regeneration around the margins of the ulcer. The underlying submucosa shows extensive fibroblastic proliferation, an increase in the number of capillaries, and infiltration with inflammatory cells over a zone much wider than the ulceration. The inflammatory cells are chiefly polymorphonuclear, but mononuclear cells are present in abundance.

Urinary examination shows little to account for

the cystitis, at most a very few red blood cells; although the patient will have noted, in some instances, some blood in the urine. Cultures of the urine have been consistently negative, and search for tubercle bacilli has been fruitless.

The tissue changes present have given the lesion the aptly descriptive name of submucous fibrosis of the bladder.

While the typical symptomatology leaves no doubt as to the site of the disturbance, there are occasional cases, exemplified by the fourth case of Hunner's series and the one here reported, in which the presenting complaints and symptoms are misleading.

#### REPORT OF CASE

A 58-year-old white housewife was first seen in September, 1937, complaining of abdominal distention with gas, belching, and flatulence. Accompanying the distention there was severe vaginal pain and urinary frequency. Her symptom-complex started with the abdominal discomfort which came immediately after or during meals, and produced the intolerable pain in the vagina. The symptoms had been present for four years, and she was accustomed to being forced to hurry from the table during this period of time in order to relieve herself of accumulated rectal gas and thus ease her pain. If this was not successful she would resort to enemas or sitz baths. The pain occurred so promptly after the ingestion of any food and most liquids that she was undernourished, very nervous, apprehensive, and afraid to eat.

She gave a story of lifelong constipation, with the habit of regular, frequent use of the enema tube because the use of cathartics and their resultant cramping aggravated the intense vaginal pain. There was no rectal pain and no burning on urination. Her sole urological complaint was frequency, which she stated always came and was made worse with the accumulation of gas in the bowel. Her past history and inventory of systems were not relevant.

The positive findings in the physical examination were: a small, undernourished, pale, apprehensive woman. Weight, 94½ pounds; height, 59 inches. The turbinate bones were large and covered by reddened, thick mucous membrane. The tonsils were large and showed moderate infection. The mouth was edentulous, the last teeth having been removed some three months previously because of infections. The heart was small, rate 92 with a slightly impure, first sound and a faint systolic murmur. The blood pressure was 162/100. The peripheral vessels were slightly sclerotic. There were a few, diffuse, sibilant squeaks throughout the lung fields, which were thought to be atelectatic in origin. The abdominal wall was relaxed, with moderate distasis of the recti muscles. There was much crepitus and gurgling of gas on manipulation of the abdominal contents. The wall was held semi-rigid, and the ascending and descending portions of the colon could be felt as contracted, firm cords. The rectal sphincter was spastic and the pelvic examination revealed nothing of note. The urine showed a faint trace of albumin, five to seven pus cells and two to five red blood cells per high dryfield. Blood count showed a secondary anemia.

Roentgenological examination of the gastro-intestinal tract showed evidence of colon irritability and a questionable filling defect in the rectosigmoid junction, which has since been shown to fill out.

After three weeks' trial on carefully outlined and faithfully executed colon management, she reported back with no relief of symptoms. At that time she was referred for a study of the urinary tract. The cystoscopic investigation revealed a submucous fibrosis in the vault of the bladder, which was then cauterized. When seen three days later there was still some slight urethral irritation, but practically all of the agony she had suffered for four long years had subsided. In three weeks' time her only symptoms centered about the constipation. In three months' time her weight had increased by ten pounds, and this has been maintained at that level since. There have been several recurrences of the bladder symptoms, necessitating repeated fulguration, which is a typical story of Hunner's ulcer. Between fulgurations, however, she has continued to enjoy reasonable comfort and health.

384 Post Street.

<sup>1</sup> Tr. South. Surg. & Gynec. Assoc., 27:247, 1914.