for treatment of any kind, and, although in this instance the treatment was begun promptly, its only effect seemed to be some lessening in the frequency and severity of the clonic spasms and possibly a slight prolongation of life.

MASTITIS COMPLICATING TYPHOID FEVER.

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ALTHOUGH the typhoid bacillus is recognized as the cause of many suppurative processes, mastitis of this origin is a very rare event. The authors are indebted to Dr. A. B. Ball for permission to report the following case:

Augusta A. (medical number, 5564), aged thirty-four years, janitress, was admitted to the New York Hospital on May 25, 1901, complaining of fever and weakness. She had never suffered a serious illness before.

Menses began when she was sixteen years old, and have been regular, scant, and painless. She has had two children, aged, respectively, six and three years, and one miscarriage five years before admission. Both children were nursed until they were a year old. The patient has never been troubled at any time with her breasts or nipples, and has never sustained an injury of the same.

She entered the hospital at the end of the third week of her fever, which had been without incident except for the severity of her bronchitis and the history of chills accompanied by vomiting. The latter were probably due to the administration of antipyretics.

On admission the patient's temperature was 105° F., respiration 28, and pulse 140 per minute. She was well developed and well nourished, but seemed listless. Lungs showed signs of a well-marked bronchitis. The spleen was not palpable. The abdomen showed a few typical rose spots. A positive Widal reaction was obtained on the day of admission. Ehrlich's diazo test gave a doubtful reaction. Blood cultures were made on May 27th, and again on May 31st (the twenty-third and twenty-seventh days of disease), but were negative for typhoid bacilli. Rose spots continued to appear for a week after admission, and two days later had entirely disappeared. Signs of bronchitis persisted until June 5th, the thirty-second day of the disease.

June 9th. Temperature touched normal on this the thirty-sixth day of the disease. (See chart.)

12th. Three days later the patient began to complain of pain in the left breast.

14th. The left breast is now swollen, and a hard and tender lump can be felt at its outer side. The glands in the axilla are also enlarged and tender.

15th. The right breast also has now become tender. Lead and opium compresses were applied to both breasts, and for a time these seemed to improve. The patient, however, began to have a rise of temperature

in the afternoon. (See chart.) This did not show the stepladder pattern of a relapse, but was of a septic type.

20th. The swelling and tenderness of the left breast has become much more marked, and involves the two upper and the outer lower quadrants. Skin freely movable; nipple not attached; no pus seen to exude from it after manipulation.

22d. Leucocytes, 13,200.

24th. Fluctuation was detected in the left breast. On aspiration a small amount of thick pus was obtained, from which cultures and cover-slips were made. The swelling in the right breast seems much diminished.

25th. The abscess in the left breast was opened, under chloroform, and about 150 c.c. of thick pus obtained. The abscess cavity occupied the upper and outer part of the breast, and consisted of many loculi, which were broken up with the finger.

Following the operation the temperature fell to normal, and healing was without incident. The painful lump in the right breast, which had been noticed first on June 15th, gradually diminished up to the time that the patient left the hospital, but even then a slight induration in the upper and outer quadrant could be made out. No exploratory puncture was made.

Bacteriological Examination of Pus Aspirated from Left Breast. Cover-slips show numerous pus-cells. A very few bacilli, but no cocci, were found. Cultures were made from the pus upon agar and in bouillon. The former gave a growth showing the characteristic features of the growth of the colon group upon agar. Smears showed a pure growth of a short bacillus. In twenty-four hours the bouillon showed a pure growth of feebly motile bacilli. On transplantation these gave in eight hours a growth of actively motile bacilli. This culture was tested with the blood-serum of a typhoid patient, and in a dilution of 1:10 gave a well-marked Widal reaction in ten minutes. Typhoid bacilli were present, therefore, in the abscess in pure culture.

The involvement of the breasts in typhoid fever must be a very rare event, if we may judge from the scarcity of the literature on the subject; yet it has been noticed several times by some observers. In 1874

Laudet¹ recorded five cases observed personally in which one or both breasts became tender and swollen, and in which inflammatory masses could be made out in the breast tissue. All resolved without suppuration. Vallin² reported a similar case. Curschmann³ states that, in his experience, mild, transitory swelling of the breasts at the height of the fever is not uncommon, and may readily be overlooked, since the patient makes no complaint. He has seen similar swelling twice in young men. Suppuration is, he thinks, very rare. Fornaca⁴ has recently reported a case of typhoid fever in which pain developed in the right breast on the twenty-ninth day of the disease, three days after the temperature had been normal. This was followed by a rise of temperature and by swelling of the breast, but no fluctuation could be detected. Five days later, on an exploratory aspiration, three drops of seropurulent fluid were obtained which showed typhoid bacilli on cultures. Later a similar trouble developed on the left breast, but aspiration was negative. As both breasts healed without abscess formation, this can hardly be classed as a suppurative case.

We have been able to find records of only four cases of suppurative mastitis associated with typhoid fever. In that reported by Charlotte P. West⁵ the abscesses of the breast were associated with a general pyæmic condition. At the beginning of the third week of the fever both breasts became swollen and tender, which condition was associated possibly with the hypodermoclysis of salt solution. This condition disappeared. At the beginning of the fourth week, however, localized dusky red, swollen elevations and patches were discovered on both legs, both arms, and both breasts. Those on the right leg, left arm, and both breasts suppurated, and healed after free incision. The patient recovered. No examination of the pus was made.

In 1891 Destrée⁶ reported two cases of typhoid fever in men in each of which an abscess developed in the right breast at the end of the third week. The pus from each abscess showed only staphylococci.

The fourth case, reported by Capellari,⁷ almost exactly parallels our own. A girl, aged fifteen years, in the fourth week of an attack of typhoid fever, developed pain and swelling over the whole right breast. This resisted all palliative treatment. The temperature, which had touched normal, assumed the septic type. Fluctuation in the breast

¹ Clinique Médicale de l'Hôtel Dieu de Rouen, Paris, 1874, pp. 96-99 and 113-118.

² Bull. de la Soc. Clin. de Paris, 1877, vol. I, p. 148.

³ Der Unterleibstypus, Vienna, 1898, p. 184.

⁴ Sulla mastite tiposa. La Riforma Med., 1900, vol. III, p. 256.

⁵ Report of an Unusual Case of Typhoid Fever: Swelling of both Breasts, followed by Suppuration; Thrombophlebitis. Philadelphia Polyclinic, 1898, vol. vii, pp. 233-256.

⁶ A propos de quelques cas de suppuration compliquant la fièvre typhoïde. Journal de Médecine de Bruxelles, August 5, 1891.

⁷ Ascesso mammario metastatico consecutivo a tifoide in adolescente. Corriere sanit., 1900, vol. xi, p. 88.

was detected, the abscess opened, and recovery followed. No bacteriological examination was made.

Mastitis accompanying typhoid fever, therefore, may or may not lead to suppuration. The latter condition is probably frequently overlooked, owing, as Curschmann suggests, to the apathetic state of the patient. The onset in Leudet's five cases was in the fourth week, and Curschmann speaks of its occurrence at the height of the disease. In the right breast of our patient it occurred in the sixth week. The favorable outcome in this class of cases led Leudet to the statement that inflammation of the breasts is a matter of no moment in typhoid fever, and heals spontaneously.

Suppurative mastitis in typhoid fever must be much rarer than the form which undergoes resolution. When not a part of a general pyemic condition, it arises late in the disease, as do most of the other true typhoid suppurations. In Capellari's case and in our own the temperature had touched normal before the mastitis began. The course seems to be mild, and no difficulty was experienced after incision of the abscess. As with other abscesses, the fever was of the septic type, increase in the number of leucocytes was present, and the neighboring glands in the axilla were enlarged and tender.

Although both Curschmann and Capellari state their convictions that such abscesses are caused by the typhoid bacillus, Fornaca's case and the case here reported seem to be the first in which this causal relation is established. The source of infection is probably through the blood, for we know that in the majority of the cases of typhoid fever, typhoid bacilli can be obtained in cultures from the blood. We failed, however, in two attempts to do so in this case; but it must be remembered that these attempts were made late in the disease, when the chances of successful cultures are much diminished. In looking for a cause for a *locus minoris resistentiæ* in the breast, Capellari lays stress upon the age of the patient, believing that at puberty the mammary glands are less resistant, owing to their rapid growth. In our case it is worthy of note that the patient regarded the dry cupping, used on account of her bronchitis, as the source of her trouble. The breasts are, however, usually spared in cupping, which in this instance was mostly confined to the chest, behind, and the pain at cupping was more probably the effect than the cause of the early inflammation.

It has been shown that bacteria present in the blood may pass into the milk. Basch and Weleminsky,¹ however, believe that this is only possible where a lesion, especially a hemorrhagic lesion, is present in the mammary gland. In their experimental work with typhoid bacilli on guinea-pigs they failed to obtain typhoid bacilli in the milk, even

¹ Ueber die ausscheidung von Krankheitserregern durch die Milch. *Jahrb. f. Kinderheilkunde*, 1896, vol. xiv. p. 105.

when the bacilli were present in the blood in large numbers. Since we know that gross lesions of the breast may occur in typhoid fever, it seems probable that under such circumstances, at least, typhoid bacilli might appear in the milk of a nursing woman either during or after an attack of typhoid fever.

REPORT OF A CASE OF LYMPHOCYTOSIS, WITHOUT GLANDULAR ENLARGEMENT, COMPLICATED WITH PNEUMONIA.

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In presenting sections of the cerebral cortex of the following case, among a number of others of epileptic mania and status, to Professor Barker, of the Chicago University, the contents of the bloodvessels and the perivascular lymph spaces were so striking that the case seemed to merit a special study by itself. The condition was at first thought to have some relation to the gross changes found in the encephalon; but this was later disproved by the finding of the same condition in the vessels of the other organs. The patient was from the service of Dr. Stockton.

Mary C., white, single, aged thirty-eight years. She was an illegitimate child, and had spent most of her life in the county poor-house before being admitted to the hospital. She had been a patient in the hospital for more than twenty years, and nothing is known of her condition physically or mentally prior to this time. During her stay in the hospital she had frequent attacks of grand mal. At times the fits were very frequent, lasting for days, these periods being followed by periods of freedom from the attacks. For two years or more she had suffered from severe constipation, accompanied by cold and clammy skin, cold extremities, and increasing dementia. For the past year she had been very anæmic, and during the last two months of her life she became so weak as to be confined to her bed, and for the greater part of this time was the subject of a severe diarrhoea, with fetid, watery discharges. This condition was accompanied at times by nausea and vomiting, and abdominal tenderness was a constant feature. Her epileptic convulsions continued during this attack, and she was exceedingly irritable and quarrelsome. The skin was very sallow, and during the last week she had many fainting spells. Her pulse averaged from 100 to 120 to the minute, and her temperature ranged from 100° to 101° F. Death gradually followed from exhaustion.

The autopsy was held two hours after death, the organs being examined in the order in which they are given below.

The body is that of a well-nourished woman, length 151 cm., weight 78 pounds. Rigor mortis present in the inferior maxilla, not elsewhere. Livor mortis marked in dependent portions. Pupils equal and regular. Nasal and aural passages clear. Tongue dry and heavily coated.