culosis institutions or under the direction of the National Tuberculosis Association, is a matter which should be worked out carefully by the respective authorities.

I am convinced that by carrying out systematically the methods I have described, to prevent relapses in arrested cases of tuberculosis, and by the subsequent periodic reexamination of the one time tuberculous soldier or sailor, not only will many valuable lives be saved, so greatly needed in this period of reconstruction, but individuals and families will be spared a great deal of suffering, and thousands of dollars of pension money will be saved to our government.

16 West Ninety-Fifth Street.

MASTOIDECTOMIES UNDER LOCAL ANESTHESIA

A BRIEF REPORT ON NINE MASTOIDECTOMIES (ONE DOUBLE), UNDER LOCAL ANESTHESIA AT THE BASE HOSPITAL, CAMP UPTON, N. Y.

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During the measles and pneumonia epidemic of the winter of 1917-1918, it was found necessary to operate in several cases in which acute mastoiditis complicated the pneumonia. In the absence of an expert in nitrous oxid and oxygen anesthesia, and part of the time of one in nitrous oxid anesthesia, it was deemed expedient to perform these operations under a local anesthetic. There was also one case from the recent influenza epidemic in which the operation was started under nitrous oxid-ether anesthesia; unpleasant symptoms arose when the anesthetics were switched, and it was decided to give the patient local anesthesia.

The method of administration was as follows: The patient was first given one-fourth grain of morphin subcutaneously, and in half an hour a 0.5 per cent. solution of cocain or procain, when the latter became available, was injected into the skin along the line of incision. The injection was then carried into the deeper layers and finally under the periosteum over the entire area of the mastoid. The insertion of the sternomastoid muscle and the posterior canal wall were injected at the last. About 15 c.c. of a 0.5 per cent. solution were used, in each case, although as high as 30 c.c. of a procain solution were used in one case—a double mastoiditis—and as low as 6 c.c. of a 0.5 per cent. solution of cocain were used in another case.

After waiting for from five to ten minutes, the operation was started and carried on in the usual manner. The patient usually complained somewhat of the pounding necessary to remove the cortex, but all admitted afterward that there was little actual pain.

In only one case did I find it necessary to resort to general anesthesia. In this case, that of a Russian who was very nervous and apprehensive from the start, we finished under chloroform.

One case in which I did a double mastoidectomy at the same time deserves special mention, as the patient was so ill at the time that it was not deemed advisable to give any type of general anesthetic.

The most remarkable thing about these cases, in my opinion, was the almost total absence of any shock

following the operation. This indicates more conclusively than the statements made by the patients that there was very little pain or none at all. This was also observed by Major Harlow Brooks, then chief of the medical service.

In this series of cases the incidence of dry middle ears was 100 per cent., and there was no mortality. A patient with double mastoiditis, the most seriously ill of all, is now recovered and ready for discharge. He has been in the general surgical service for a recurrent empyema and multiple abscesses. Although ten days after the operation for mastoiditis a blood culture revealed *Streptococcus hemolyticus*, it was decided that the blood stream infection probably came from the chest condition, rather than from an infected sinus thrombosis, as neither sinus was exposed at the time of operation, and the overlying bone was found healthy.

REPORT OF CASES

CASE 1.—D. J., a colored man, aged 21, farmer, admitted to my service, Jan. 3, 1918, for epistaxis, had had repeated nosebleeds for several years, and had suffered from swelling of the feet, legs and abdomen for two years. Urinalysis revealed albumin, + + +, and granular, waxy and epithelial casts. The specific gravity of the urine was 1.007. An additional diagnosis of chronic parenchymatous nephritis, with cardiac hypertrophy, was made.

January 6, the patient developed acute, bilateral, purulent otitis media.

January 7, 50 c.c. of horse serum were given to control a nasal hemorrhage. The nose had been packed repeatedly. The right ear cleared up after free paracentesis. The left ear continued to discharge.

February 14, there was a slight swelling over the left tip.

February 15, a simple mastoidectomy with the usual incision was performed. The sinus and dura were exposed. The entire tip was removed. An iodoform wick was inserted into the neck in addition to the regular mastoid packing. No pus was found in the neck. One-fourth grain of morphin, and 10 c.c. of a 0.25 per cent. cocain solution were used.

April 29, the patient was discharged from service. The ear was dry and the wound healed.

CASE 2.—S. V., white man, aged 22, admitted to the hospital, Jan. 20, 1918, for measles and bronchitis, later developed pneumonia.

June 26, he complained of ear ache.

June 27, the left drum ruptured. I saw the patient after the rupture. He had considerable bronchial irritation, and it was thought unwise to give ether. The urine showed a trace of albumin. The specific gravity was 1.025. Culture revealed *Staphylococcus aureus*.

July 1, A simple mastoidectomy was performed. Fifteen c.c. of a 0.5 per cent. solution were used.

August 17, the patient was discharged, with the wound healed and the ear dry.

CASE 3.—R. J., white man, aged 23, farmer, admitted to the hospital, April 27, 1918, for measles, developed bilateral bronchopneumonia, April 30; mumps on the left side, May 4; pharyngitis and acute follicular tonsillitis, May 5. May 6 he showed signs of acute arthritis in all joints. May 7 there were signs of pericarditis with endocarditis. May 11 he developed acute purulent otitis media on the left side, for which free paracentesis was employed, and May 12 on the right, with the same treatment. There were positive signs of mastoiditis on the left side, May 24, and on the right side, May 26. Pus from the ear showed *Staphylococcus aureus*, May 25.

The urine was negative. Blood culture, June 10, revealed *Streptococcus hemolyticus*.

May 31, a simple double mastoidectomy was performed. One-half grain of morphin and 30 c.c. of 0.5 per cent. procain were used.

June 29, an abscess developed on the left scapular region of the back; also somewhat later on the legs. There was

empyema on the left side. A specimen of pus from these showed streptococci.

August 15, the wound was healed and the ears were dry.

November 12, the patient still had abscesses on the body.

November 20, the patient was ready for discharge from the hospital, cured.

CASE 4.—B. A., white man, aged 25, admitted to the hospital with measles, developed pneumonia and later an acute infection of the left ear. Paracentesis was done. The pus from the ear showed *Streptococcus hemolyticus*.

April 26, a simple mastoidectomy was performed. One-fourth grain of morphin and 6 c.c. of 0.5 per cent. cocain solution were used. The wound was left open, the better to drain what was diagnosed as the beginning of a temporal abscess. In this case also an improvised drainage tube was used in connection with neutral solution of chlorinated soda. The result of this was negative so far as any difference could be made out. Later the edges were freshened and the wound was sutured. July 18, mumps developed.

August 14, the patient was discharged from the hospital. The wound was healed and the ear dry.

CASE 5.—S. W., white man, aged 25, farmer, admitted to the hospital with measles, several days later developed bronchopneumonia. He had acute otitis media on the right side. Paracentesis was done with free drainage.

May 6, a simple mastoidectomy was performed. One-fourth grain of morphin and 15 c.c. of 0.5 per cent. cocain solution were used.

June 26, there was a second attack of bronchopneumonia, from which the patient died two weeks later. At the time of his transfer to the medical service, his ear was dry but the wound was not entirely healed.

CASE 6.—T. S., white man, aged 25, admitted to the hospital with measles, later developed bronchopneumonia. Paracentesis was done for acute, purulent, right otitis media.

June 5, a simple right mastoidectomy was performed. One-fourth grain of morphin and 30 c.c. of 0.5 per cent. procain solution were used.

July 16, the patient was discharged from the hospital. The wound was healed and the ears were dry.

CASE 7.—D. J., white man, aged 27, admitted with measles, later developed bronchopneumonia. Paracentesis was done.

June 4, a simple right mastoidectomy was performed. Procain solution, 0.5 per cent., and chloroform, 90 gm., were used. The patient was too nervous for local anesthesia.

July 10, he was discharged from the hospital with the wound healed and the ear dry.

CASE 8.—H. W., white man, aged 22, farmer, admitted to the hospital, Oct. 18, 1918, with influenza and bilateral bronchopneumonia, had pain in the left ear, November 1, and some mastoid tip tenderness, with free discharge, November 4.

November 19, a diagnosis of acute left mastoiditis, with Bezold's abscess, was made. The patient was immediately transferred to the ear service.

November 20, a simple left mastoidectomy was performed. The tip was necrosed. The neck was drained. Pus was found in the soft tissues, just outside the tip. One-half grain of morphin and 8 c.c. of 0.5 per cent. procain solution were used. Pus from the tissues showed *Staphylococcus aureus*. The patient felt little if any pain during the operation and kept up a conversation with the nurse the whole time. There was absolutely no shock following the operation. The patient was up and around the ward the next day.

November 27, the middle ear was dry. The wound healed by first intention.

CAMPTOCORMIA (BENT BACK)

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The term "camptocormia" was originally used by Souques,¹ who presented a case before the Société de neurologie in Paris in February, 1915, as applied to the forward flexion of the body with or without lateral inclination. Hurst² has reported similar cases under the name "bent back." The particulars of sixteen cases of camptocormia have been presented by Rosanoff-

Fig. 1.—Several camptocormic soldiers examined and followed by Rosanoff-Saloff for several months at the hospice Paul Brousse (de Villejuif) in the service of Souques. All three present pure camptocormia.

Saloff,³ from whose article some of the accompanying illustrations are taken. It is stated that the most careful examination of these patients has revealed no organic lesions. The author divides the patients into two classes, namely, those who had been wounded, and second, those showing no evidence of wounds. The first class included only two of the sixteen cases,

1. Souques, A.: Rev. neurol. 23: 757, 1916; 24: 142, 1917.

2. Hurst, A. F.: Brit. M. J. 2: 621 (Dec. 7) 1918.

3. Rosanoff-Saloff: Considérations générales sur la camptocormie, Nouv. iconog. de la Salpêtrière 28: 28, 1916-1917.