KRIEGSOEDEM AND BILATERAL PAROTID ENLARGEMENT.

By CAPTAIN F. A. PARK,* M.B.

(1) *Kriegsoedem.*—This is a condition so peculiarly German that to give it an English name would accuse us of want of chivalry. Over and above this, to speak of the condition as "war œdema" is incorrect; it is not war, but purposeful underfeeding that is the primary cause. It is a famine œdema, not a war œdema.

During the past thirteen months, from January, 1917, to February, 1918, while working as medical officer among the prisoners of war at the German camp of Minden in Westphalia, I saw a large number of cases of this condition, which the Germans have called "Kriegsoedem" or "Erschoepfungszustand mit Oedem" (state of exhaustion with œdema). This disease occurred among the prisoners of all nationalities who were fed on German rations only. Russians and Rumanians afforded the greater number of cases, but the French who had been sent to prison camps and there deprived of their private food packets, and those English who, having been detained for work on the lines of communication, had not been reported as prisoners and therefore did not receive parcels from England, suffered also. Latterly the Italians formed the bulk of the cases. The largest numbers were seen in April, May, and June, 1917, when the Russians and Rumanians who had been employed in building the Hindenburg line were brought back to Germany. In all I saw about 400 cases of this condition. It is inevitable that I speak in somewhat general terms, since in the first place facilities for proper investigation were not obtainable, and in the second place the regulations forbade the collection of statistics. I cannot, therefore, give any definite statements regarding blood picture, blood pressure, histological findings, or chemical analyses of the urine and other excreta, nor can I give any figures as to the German ration values, although I understand that these are now known to the authorities at the War Office.

Etiology.—Undoubtedly insufficient food is the chief cause of the disease. The German ration is low in protein and is almost fat free. As the food is chiefly in the form of soup, a large amount of fluid is ingested to obtain a small amount of nourishment. Many of these men were in the habit of taking large amounts of common salt in solution as an addition to their soup, so that chloride retention may be an additional factor in causing œdema. Myocardial weakness is probably an adjuvant.

Clinical History.—The condition commences as slight œdema of the feet and legs, disappearing when the patient is recumbent. Patients are seldom admitted to hospital in this stage, although proper feeding with rest in bed would completely restore them in a few days. The usual type found in hospital presents a massive œdema of feet, legs, thighs, and scrotum, with some puffiness under the eyes. Ascites is common. The patient is pale and dull; indeed, the appearance is strikingly like that of a case of parenchymatous nephritis. There is extreme muscular wasting and weakness. Dyspnœa is only present on exertion, except when there is hydrothorax. The heart is slightly enlarged; the action is regular, but usually slow; the muscle tones are poor, and the second aortic sound is not accentuated. Blood pressure is low. There are commonly many moist râles in the lungs posteriorly, especially towards the bases. Uncomplicated cases are afebrile. In the most serious cases there is a general anasarca, the chest and abdominal parietes are œdematous, and all the serous sacs become filled with fluid. In one case I removed 15,000 c.c. of watery fluid from the pleural sacs in a series of six punctures during two weeks. In a few cases paracentesis abdominis was done. Hydropericardium was common, but never extensive enough to require withdrawal.

The urine was scanty in severe cases, but as patients recovered there was polyuria. *It never contained albumin or casts.* The specific gravity was usually about 1015. No quantitative chemical tests could be made.

Course of Disease.—Most uncomplicated cases improved slowly with rest in bed and an additional half ration. Where abundant food, with meat and fat, could be obtained and was tolerated, improvement was rapid. Digitalis was employed without appreciable result. Diuretin also had little effect. The quality of the drugs, however, was questionable. Œdema of the legs, after work, persisted for several months after the patient's general strength had improved. A few uncomplicated cases became progressively worse and died.

Complications.—Dermatitis of the legs was common, giving rise in a few cases to lymphangitis and cellulitis. One case of thrombosis of popliteal vein occurred. Bronchitis was common, and most of the fatal cases had broncho-pneumonia and œdema of the lungs. Colitis, with mucus and blood in the stool, was a common and serious complication. No specific organism was isolated as the cause of this colitis. It is significant that very few cases occurred among the well-fed prisoners, and these were immediately amenable to treatment. As a complication of the œdema, colitis was very intractable and often fatal. Parotid enlargement is referred to in a separate note.

Pathological Findings.—About twenty autopsies were performed on cases of various orders. The most striking feature was the absence of fat throughout the body. At the normal sites of fat deposit, viz., the subcutaneous tissue, in the great omentum and the mesentery, and about the heart, the fat was replaced by œdema, an extreme condition of serous atrophy. The heart muscle was pale and the ventricles usually dilated. Pericardium, pleural sacs, and peritoneal cavity were filled with pale clear fluid. The kidneys were pale, but appeared otherwise normal. The liver was usually decreased in size and was pale. Spleen pale. The lungs were œdematous, and usually showed patches of broncho-pneumonia. In cases where diarrhœa had been marked there was thickening and hyperæmia of the mucosa of the sigmoid and rectum. Two cases of superficial ulceration were found. Unfortunately facilities for microscopic examination of tissue were lacking.

CONCLUSIONS.

(1) Kriegsoedem is the result of underfeeding, especially in fat and protein.

(2) It can be cured easily in the early stages by sufficient diet.

(3) When well established it is frequently complicated by a colitis, when the mortality is high.

(4) The ration issued by the German Government to prisoners of war is insufficient to maintain life and must be supplemented by food from home.

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(2) *Bilateral Enlargement of the Parotids.*—Among these 400 cases I encountered some twenty cases of a condition hitherto unknown to me, nor since my return have I found any reference to it in the literature, a condition of enlargement of the parotid glands which was always bilateral. The German medical officers in the camp who, when they were not student probationers (Feldunteraerzte), were country practitioners of little capacity, diagnosed these cases as Mumps, but Mumps they were not. (1) The enlarged glands were at no time hard or painful, but rather they were soft and doughy, the swollen regions being easily pinched between the finger and thumb. (2) The condition was afebrile; in no uncomplicated case did I encounter rise of temperature in association with it. (3) It was never accompanied by orchitis, and (4) it tended to persist indefinitely. Under the diagnosis of infectious parotitis these cases were sent to the Isolation Hospital, and on hospital diet their general condition immediately improved. I saw several cases three months after the onset and could observe no change in the condition.

The German medical staff were in some difficulty about these cases, having diagnosed them as Mumps, and, the swelling still continuing, they could not return them to the main camp and to work without admitting that they had made an incorrect diagnosis. It should be added that in a few cases the submaxillary glands were also involved.

I hesitate to speak of this condition as one of chronic parotitis in the complete absence of any indications of inflammation; but if not of infectious origin, then we must admit that chronic inanition may lead to parotid enlargement, but whether this enlargement is due to hypertrophy or to local œdema must remain an open question.

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