supplied directly from the various nerve-trunks, and that the vascular nerves do not pass distally as a periarterial plexus, which provides branches for the coats of the vessels. Their work has proved also that the nerve supplying any muscular or skin area also supplies the blood-vessels of that area.

Enderteritis has been found previously in peripheral neuritis, in a case of cervical rib by Todd,⁵ and has been experimentally produced by operations upon peripheral nerves in rabbits and dogs by Fraenkel,⁶ Byrvoets,⁷ and others.

The appearance of gangrene and other features in the late stages of some of my patients who had received uncomplicated gunshot injuries of peripheral nerves strongly suggested arterial obstruction, although there was no indication that any main blood-vessel had been primarily or secondarily implicated by the injury or healing of the wound. The constant fibrous contracture of muscles in these cases showed a more serious condition than was to be expected from a simple nerve injury, and the histological examination points to this being due largely to diminished blood-supply in consequence of the endarteritis. It is important to emphasise the fact that this contracture is only found to occur in the muscles whose nerve-supply has been affected, as the following case clearly indicates.

Patient received gunshot wound of left forearm about level of lower limit of antecubital fossa. At first there was profound motor and sensory loss of median distribution. The flexor carpi radialis, flexor longus pollicis and thenar muscles soon began to recover, and eventually regained almost normal power. Later vaso-motor symptoms appeared affecting the index and middle fingers, and trophic sores developed on the same digits. The colour and condition of the skin of these two fingers were strikingly different from that seen in the case of the ring and little fingers. The index and middle finger were always much colder and the capillary circulation more sluggish than in the thumb or other fingers. The only muscle showing contracture in this patient was the flexor sublimis digitorum, which was paralysed. It is known that this muscle, except for its coronoid head, receives its nerves of supply distal to the point where the other muscles, which recovered, are supplied by the median.

With the additional clinical evidence derived from such cases as the above there seems little doubt that the muscular contracture is due to ischæmia, which is secondary to vascular changes caused by the nerve injury. It seems probable that the decalcification of bone may arise from the same cause. That it cannot be due simply to immobilisation is clear in many cases where the atrophy is limited to those bones supplied by the affected nerve—immobilisation cannot be held responsible when the phalanges and metacarpal bones of the ring and little finger are the only ones showing any change in an ulnar nerve lesion.

Consequently there is strong reason to conclude that irritative nerve lesions can produce changes in the walls of the arteries supplied by the affected nerves. These changes seriously reduce the calibre of the vessel and must inevitably diminish the blood-supply to the muscles, bones, joints, and skin. From the clinical and pathological evidence brought forward in this preliminary paper it seems probable that the so-called trophic disturbances are the result of vascular changes produced by an irritative nerve lesion. The contention held by Todd⁸ that vascular changes precede trophic lesions is strongly supported by the clinical observation of these cases.

In view of the arterial disturbances here recorded there is no doubt that in the past the effect of peripheral nerve injuries upon the blood-vessels has been neglected, and it is equally clear that, if a better prognosis and more efficient treatment is to be attained, more attention must be directed to the secondary vascular changes in the future.

The practical point of greatest importance at the present moment is the early relief of the irritation. In this way the arterial changes which produce such serious complications may be prevented.

In conclusion, I desire to express my gratitude to Captain J. Morley for the opportunity of examining the patient and making a study of the leg after amputation.

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Clinical Notes : MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON PNEUMONIA AND TOXÆMIA.

BY T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.C.P.,
REGIUS PROFESSOR OF PHYSIC, CAMBRIDGE UNIVERSITY.

RECENTLY were published memoranda, by Dr. S. Riddiough and Captain H. V. Drew respectively,¹ illustrating the contrast between the local lesion of pneumonia and its toxæmia. Dr. Riddiough's notes were of a nurse under my care in the Addenbrooke's Hospital, in whom, in spite of extensive pneumonic consolidation, the general condition was but little disturbed. She would hardly admit the necessity of confinement to bed. No cardiac symptoms, no cerebral disturbances appeared at any time. Another case has recently occurred in this hospital illustrating the converse condition. The notes of the case, reported by Mr. Gittens, house physician, are as follows:—

Patient, aged 25, labourer, was admitted on Feb. 6th, 1918, with acute pneumonia. He lived in Cambridge; previous health good; outdoor worker; often got very wet. On Feb. 2nd a shivering fit, headache, and pain under left scapula; then a cough with very tenacious sputum. Well-nourished young man, with flush on both cheeks. Tongue furred, but moist. Pulse 98, full, but soft. Pupils dilate. On examination were found the usual signs of consolidation over lower half of left lung from angle of scapula downwards. Except some sternal resonance above in front, no other physical signs of importance. Right lung normal. Albumin in urine. Abdomen distended and tympanitic. Spleen not felt. Temperature 104° F.

On the following day crisis took place suddenly and normally, with a heavy sweat. The patient had been delirious since admission, and was still agitated; did not know where he was, and incessantly tried to get out of bed. Last night was thus a bad one, in spite of 1 gr. of morphia subcutaneously. A day later the pulse became very irregular and weak, so that coffee and strychnia, 1/22 gr. (subcutaneously), were administered. This condition persisted for about four hours and, taken with the delirium, seemed very perilous. Meanwhile red crepitations were following normally in the affected part of lung, and no further pulmonary symptoms appeared. Abdomen still tympanitic. The temperatures after the crisis were rather subnormal. From the 9th to 11th patient remained in this condition, stupor alternating with active delirium. Once or twice urine was passed into bed. On the 11th he became a little more rational, and had glimpses of where he was; he was drowsy rather than delirious, and took food better. Pulse feeble and second sound reduplicated at apex. From this date patient made a good recovery; he rose from bed for the first time on March 3rd.

The diagnosis was more than once revised; an underlying typhoid was considered, in which subnormal temperatures are not unknown; but by agglutination tests neither A nor B was indicated. Against pneumococcal meningitis was the absence of pain in the head, vomiting, convulsion, and so on, and ultimately the rapid and complete recovery. I dwell on this case before the students as another instance of lack of proportion between local lesion and toxæmia; the local lesion was never considerable and did well, while, notwithstanding the delirium, the tympanites and the poisoning of the myocardium were alarming and persistent for some days after the crisis. I suggested that the different strains of pneumococcus might prove to have each its own clinical characters. These cases warn us not to take too mechanical a view of acute pneumonia. Even venesection may be helpful rather by drawing off toxin than by relieving venous pressure.

VINUM COLCHICI IN TRENCH FEVER.

BY W. GORDON, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL.

IN their valuable report to the Medical Research Committee on Trench Fever² Captain C. E. Sundell and Captain A. T. Nankivell comment on the unsatisfactoriness of present methods of treatment. They make no mention of colchicum, and I am unaware of any allusion to colchicum in the literature on the subject. Yet vinum colchici seems to me to have distinct value in dealing with the troublesome shin pains of which so many cases come before us—sufficient value at all events to justify attention being drawn to it. The following cases illustrate what I mean.

¹ Brit. Med. Jour., 1917, i., 732; 1917, i., 581.

² THE LANCET, March 16th, 1918, p. 399.