SIMULTANEOUS EMBOLISM IN BOTH ARMS

BY

J. V. FIDDIAN, M.D.

Surgeon to the District Infirmary, Ashton-under-Lyne

We read a good deal about arterial embolism of the limbs these days, but it must be a somewhat rare occurrence, for I have had to wait twenty-nine years as a surgeon at a hospital of two hundred mainly surgical beds to see my first case. But, as if to make up for this delay, my case when it did appear presented me with simultaneous embolism of both axillary arteries. How rare this is I have not been able to discover. The surgical literature at my disposal does not record a single case.

Case History

The patient, a railway worker aged 69, had a Syme's amputation of his right foot in 1915 after an accident on the line. The stump has served him well, his only complaint being the usual one with Syme's amputations—that the boot tended to work round in internal rotation so that the toe struck his other foot in walking.

Four months before admission to hospital an ulcer developed over the external malleolus. It was very painful and gradually extended in spite of rest in bed, "elastoplast" bandaging, ultraviolet irradiation, and a variety of dressings, including penicillin. On admission he was seen to be a healthy-looking man. His past health record was good: he had not attended his panel doctor for twenty years. His blood pressure was 130/80, his urine was free from sugar and albumin, and his Wassermann reaction was negative. The radial artery was thickened, however, and capillary circulation at the extremities was slower than normal. A diagnosis of arteriosclerotic circulatory defect was made, and he was advised to have the limb amputated below the knee.

On June 24, 1947, I amputated the leg 4 in. (10 cm.) below the tibial tubercle under thiopentone-gas-oxygen-ether given by Dr. John Moore. The reduced size of the lumen of the tibial arteries was noticed. Healing was retarded by the poor nutrition of the flaps. There was no inflammatory or febrile reaction, but when the stitches were removed on the twelfth day there was considerable failure of union. Healing proceeded very gradually. His general condition was good and he was free from pain. He got about the ward in a wheeled chair and later on crutches.

On Sept. 12, at 5.30 p.m., he went out on crutches to the toilet and while there felt tingling in both wrists and "came over faint." He walked back to his bed on his crutches with assistance. The tingling increased and numbness developed in his hands. A little later he complained of pain in both upper arms. When I saw him at 6.30 he was not greatly distressed, but said the use had gone out of both his arms. They were cold and blue. He could move his fingers slightly. No radial pulse could be felt on either side. Pulsation was present in the left brachial artery to about 1 in. (2.5 cm.) above the humeral condyles. There was no pulsation on the right below the axilla, where the third part of the axillary artery was pulsating.

At 7.30, using brachial plexus block analgesia, I exposed the site of the embolism in the right axillary artery and, controlling the pulsating artery by a loop of tape held up by a haemostat, incised the non-pulsating area immediately below. A clot some 3 in. (7.5 cm.) long was extracted and a small rubber catheter was passed down the artery and suction applied by a syringe; in this way several more pieces of clot were obtained, and a stream of 2% citrate solution was injected. The arm was then massaged in an upward direction and finally the artery was closed by a single continuous suture of No. 2 nylon with a very fine needle. The adventitia was stripped from the artery above the incision and the tape was then relaxed. Pulsation could immediately be felt at the elbow. Others in the theatre said they could feel the radial pulse. The wound was closed and dressed and the patient given a cup of tea and a

cigarette. After an interval of half an hour a similar proceeding was carried out at the lower end of the left brachial artery. A bifurcated clot which had filled the lower part of the brachial artery and the upper 2 in. (5 cm.) of both radial and ulnar arteries was extracted with forceps. Directly the artery was closed and the tape released full volume was restored in the radial pulse.

In view of the different fate which befell the arms I reviewed my technique to discover if possible what determined failure, on the right and success on the left. Differences of procedure were as follows:

Right	Left
Operation two hours earlier	Operation two hours later
Incision in non-pulsating artery	Incision in pulsating artery
Denudation of vessel not so satisfactorily performed	Very thorough denudation of vessel
Injection of heparin had not been given, through delay in obtaining it.	Injection of heparin before starting operation.

Whatever the cause, and I am inclined to blame the inadequate denervation of the right artery, the subsequent fate of the two limbs was strikingly different. By the next morning the left arm was of normal appearance and all movements of the wrist and fingers could be obtained, and with considerable power. Radial pulsation was of normal volume. Subsequent progress was uneventful. The wound healed by first intention and the arm has remained in full function ever since. The right arm was discoloured and cold from the elbow downwards. Pulsation could be felt in the brachial artery down to the elbow. Capillary circulation could be shown to about 2 in. (5 cm.) below the elbow. No radial pulse could be felt. Heparin was pushed, and the arm was kept exposed to cool air.

A masseuse visited him several times a day to give light effleurage and the skin was kept as sterile as possible by rubbing with spirit. 125,000 units of penicillin were given thrice daily. The colour remained the blue of a bruise and no improvement in capillary circulation could be seen, but the patient said he could feel life in the forearm nearly to the wrist and could make some slight movement of one or two fingers. After nineteen days massive vesication appeared and I amputated at the lower third of the upper arm. He has made a good recovery, uses his left arm normally, and is busy trying to walk on his new artificial leg.

KETONURIA IN A CHILD WITH CIRRHOSIS OF THE LIVER

BY

G. T. RUTHERFOORD, M.B., B.S.

Late Resident Medical Officer, Southampton Children's Hospital

The interest of the following case lies in the fact that a child with cirrhosis of the liver had ketonuria as the chief sign. The cirrhosis was unsuspected during life. The initial illness, characterized by constipation and abdominal distension, was apparently not related to the liver disease.

Case Report

In November, 1945, a boy aged 2½ was admitted to the Southampton Children's Hospital with severe constipation and abdominal distension. The condition was diagnosed as Hirschsprung's disease. A barium enema shortly after admission revealed a mild degree of megacolon; another, two months later, showed no abnormality. During the next eighteen months the boy was seen regularly in the out-patient department. He remained in fair health, though persistent constipation necessitated the regular use of aperients and occasional enemata.

In January, 1948, when aged 4 years 10 months, he was re-admitted. He had been well until the day before admission, when he had had a convulsion. A further convulsion occurred a few hours later, this being followed by a third on the morning of admission, since when he had been comatose. On examination he was found to be unconscious, slightly cyanosed, and