abundance of this, but we did find that, as early as 1906, Crile and Dolley, perfusing Ringer's solution into the central cut ends of a dog's carotids (previously killed with carbon dioxide), always succeeded in restarting the heart within five minutes. At a much later date arterial transfusions on war casualties seemingly dead from exsanguination were used with success by the Russians (*Soviet War News*, 1944, p. 982). Similarly, Devitt and Wigderow (1951) and Bayles (1951) reported the resuscitation of moribund patients by means of intra-arterial transfusions. Added to this, recently in our own neurosurgical unit, as no doubt in others, the reinfusion of blood into the radial artery after induced hypotension by arteriotomy has demonstrated without question the speed at which the systolic pressure can be raised with apparent safety.

We none of us desire to put such a line of treatment to the test, but should the circumstances arise again we certainly feel that our earliest line of treatment, whether the patient is child or adult, will be the rapid injection of an appropriate volume of normal saline into the left ventricle through a cardiac puncture needle.

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Cerebral Thrombosis Complicating Pregnancy

The following case is presented because, although there are many references to cerebral thrombosis in the puerperium, I was able to find only one case of cerebral thrombosis complicating pregnancy. In that case the patient was only six weeks pregnant.

CASE REPORT

A woman aged 30 was admitted to hospital on July 2, 1950. She had been attending the antenatal clinic, and her previous history revealed that her first child was born in 1944 at the 34th week and lived only one day. The second pregnancy, in 1949, lasted only six and a half months, when a miscarriage occurred for no apparent reason. An appendectomy was performed in 1947. The present pregnancy had been normal until the 26th week, when she had had a "show," but with rest in bed and morphine no further bleeding occurred. Since then no abnormality had been discovered on her routine antenatal visits.

On admission a history was obtained from relatives that between 1 and 3 p.m. the patient had had seven "fits" but she admitted to only one. She was in a very dazed state. No abnormality was revealed on examination. The uterus was 34 weeks in height, presentation was a vertex, and the lie an L.O.A. The blood pressure was 140/90, but no albuminuria or oedema was present. The haemoglobin was 76%. In spite of the negative findings she was treated as an eclamptic, with morphine, chloral hydrate, and magnesium sulphate. By the following morning no further fits had occurred, but she had difficulty in comprehension and in expressing herself. She obeyed commands but was unable to give her name or recognize where she was. The only physical abnormalities elicited were a positive Babinski sign on the right side and a disturbance of the fine movements of the right hand. On July 4 she had nominal aphasia, with numbness of the right lower face and weakness of the muscles of the right arm. The cerebrospinal fluid revealed no abnormal constituent and was not under pressure.

The patient made a gradual recovery, especially in her nominal aphasia, but on August 8, although her speech was practically normal, brachial paresis of the right arm was still present. The condition had been diagnosed as a thrombosis of the inferior frontal branch of the left middle

cerebral artery. As it was uncertain whether the cerebral lesion might not be accentuated by a normal labour, it was decided to deliver the patient at term by a lower-segment caesarean section. On August 10 Mr. C. McIntosh Marshall performed this operation under local analgesia, with the delivery of a normal 7-lb. (3.2 kg.) female child.

After the operation the patient's condition improved slowly and she was discharged on August 25. In October she had only occasional slight hesitation in her speech and there were no signs of paralysis detectable in any muscle. The blood pressure was 110/75 and her baby was healthy and thriving well on artificial feeding.

COMMENT

Kendall (1948) described two varieties of thrombosis of the intracranial vessels complicating pregnancy—namely, a primary or simple and a secondary or septic type. No evidence of sepsis was discovered in the above case, and it is therefore classified as a primary or simple thrombosis. In a review of the literature, Kendall found that Bristowe (1888) had reported a case, confirmed at necropsy, and the patient was six weeks pregnant. This is the only case I could find in the literature available. My case occurred in the third trimester, not in the first. Dickenson (1896) reported a case in which there was a persistent corpus luteum.

Although cerebral thrombosis in pregnancy is rare, there are many cases described in which it occurred in the puerperium. This disease was recognized in the nineteenth century, cases being described by Ménière (1828), Churchill (1854), and Gowers (1893). Interest in this subject has revived in the last 12 years owing to Ritchie Russell (1939), Sheehan (1939), Symonds (1944), Purdon Martin (1939, 1948), and Kendall (1948).

Kendall gave the following as the symptoms of cerebral thrombosis: headache, convulsive phenomena, localized cerebral lesion, raised intracranial pressure, and disturbance of speech. Headache, which is an early symptom, is either general or unilateral. In the latter instance the pain is localized to the presumed side of the lesion. In my case this symptom was not elicited on questioning. Convulsive phenomena are common and may be focal or generalized or begin at one side and spread all over. I did not see convulsions in this case, but a description of them by the relatives suggested they were of the generalized type. Localized cerebral lesions usually show in several hours or even days, and in my case localized lesions in the right arm showed in 24 hours. Raised intracranial pressure may be present in some cases but this abnormality was not elicited. Disturbance of speech is usual if the right limbs are affected. Nominal aphasia was present in this case, but, as often happens, the patient made a complete recovery. Purdon Martin (1948) found in his case that recovery in speech started to occur in 24 hours. Venous thrombosis is occasionally present in the pelvis or leg veins, but no evidence of this was elicited.

Diagnosis in cerebral thrombosis is usually easy, but epilepsy, eclampsia, embolism, or cerebral abscess must be eliminated. Ritchie Russell (1939) and Sheehan (1939) recommended that if fits occur they should be treated as eclamptic fits until proved otherwise.

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