breathing rapidly and deeply. There was slight neck rigidity. The abdomen was not distended, and rectal examination was negative. The urine contained a large quantity of acetone. Gerhardt's test for diacetic acid was also positive. Sugar was absent. Consciousness returned a few hours after admission. Next day a purulent nasal discharge, pharyngitis, and cough were noted. Radiographs of the chest and examination of the cerebrospinal fluid revealed no abnormality. The blood-sugar level was not estimated. A few days later, following a course of a sulphonamide, recovery appeared to be complete.

After leaving hospital he was noticed always to be listless and easily tired, though well enough to attend school for some weeks. In April, 1948, he was in bed for a week with pyrexia, vomiting, and diarrhoea. His parents remarked that at times he became excessively thirsty, and had an inordinate liking for salt. Apart from a distaste for sweet things, his appetite, though poor, was normal.

In July, 1948, he was again readmitted. A convulsion, preceded by severe abdominal pain, had begun a few hours previously, since when he had been unconscious. On examination he was found to be unconscious and slightly cyanosed, but was breathing normally. No other abnormal physical signs were elicited. The urine contained large quantities of acetone and diacetic acid. No sugar was detected. A sample of blood (taken on admission) showed a blood-sugar level of 35 mg. per 100 ml. A few hours after admission he was conscious and rational and was drinking glucose-water freely. His condition, however, deteriorated. During the night there were two convulsions, and vomiting became frequent. Twenty-four hours after admission he died in a third convulsion.

Post-mortem Findings.—Development normal; nutrition fair; no jaundice. **Lungs:**—Bulky and emphysematous; distended with air anteriorly and cover heart; some petechial haemorrhages on posterior surface; normal appearance on section. **Heart:**—Many large subpericardial haemorrhages. **Spleen:**—Much enlarged; weight, 4½ oz. (135 g.); Malpighian bodies prominent. **Liver:**—Small; weight, 1 lb. 4½ oz. (580 g.); surface coarsely roughened; on section, coarse cirrhosis and early nodular hypertrophy. **Pancreas:**—Normal. **Kidneys:**—Cortex swollen, showing toxic changes. **Colon and other organs:**—Normal.

Histology.—**Liver:**—Portal cirrhosis of nodular type; the portal tracts show excess of fibrous tissue, and heavy infiltration by lymphocytes and a few eosinophils; the liver lobules are very irregular in size and shape; the sinusoids are full of red cells, indicating acute passive congestion. **Pancreas:**—Normal. **Kidneys:**—Marked congestion of the medulla and cortex and of glomeruli; cloudy swelling of tubules.

Comment

It may be inferred that the first attack of convulsions, which ceased spontaneously and did not recur for five months, was hypoglycaemic in origin and was precipitated by a mild infection of the upper respiratory tract.

The low level of the blood sugar was no doubt due to the liver disease (Hartmann and Jaudon, 1937), and was probably the cause of death. Hypoglycaemia has been observed in the last stages of cirrhosis (Peters and van Slyke, 1946; Halbertsma, 1932). In this case, however, the absence of ascites, jaundice, and wasting shows that the disease was hardly in the last stage. Moreover, there had been recovery from the previous attack. Peters *et al.* point out that the hypoglycaemia of liver disease characteristically appears at the end of a considerable period after meals, and that often it is preceded by alimentary hyperglycaemia.

My thanks are due to Dr. H. Oakley White for permission to publish this case; to Dr. H. H. Gleave for the post-mortem examination, results of pathological and histological investigations, and comments; and to Dr. G. Ormiston for helpful criticism and advice.

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Medical Memoranda

Spontaneous Subarachnoid Haemorrhage in Infancy due to Angioma of the Cerebellum

The rarity of spontaneous subarachnoid haemorrhage in infancy and the nature of the pathology of this case prompt its presentation for publication.

CASE HISTORY

The patient, a male infant, was the only child of healthy parents and had been born at full term by a normal labour. The neonatal course was uneventful, and he progressed well in all respects up to the age of 3½ months. Then suddenly one afternoon, while being dressed by his mother, he had a convulsion and became semicomatose. He remained in this state, punctuated by recurring generalized fits, until his admission to hospital some hours later. There was no history of any antecedent illness, and the family history revealed nothing of note.

On admission his temperature was 104° F. (40° C.). His condition was that of a resistant stupor. The head was held turned towards the right shoulder and there was conjugate deviation of the eyes to the right. A capillary naevus 3 cm. in diameter was noticed over the left occipital region, and a small capillary naevus was present on the right upper eyelid. The fontanelle was not bulging, but it felt spongy. The head circumference was 17 in. (42.5 cm.). The pupils were of normal shape and reacted to light; no abnormality was seen in the fundi. The head deviation made the assessment of any nuchal rigidity difficult, but there was no spasticity or obvious paralysis of any of the limbs. The heart rate was markedly irregular, tachycardia and bradycardia alternating in an inconstant manner. No other abnormality was found. Lumbar puncture produced 6 ml. of evenly blood-stained C.S.F.; the supernatant fluid was yellow.

Thiopentone per rectum and chloral hydrate were given to control the fits, and 500 mg. of ascorbic acid and 10 mg. of "synkavit" were injected intramuscularly every six hours. Oesophageal feeding was used. No significant change in his condition occurred until two days later, when oedema of the eyelids, right-sided facial spasm, and spasticity of all limbs were noted. A lumbar puncture, done four days after the onset of the illness, again showed a blood-stained C.S.F.

The next day saw considerable improvement in the clinical condition. The fits had ceased, the temperature was almost normal, and the patient was able to take feeds from a bottle. By the ninth day the palpebral oedema had subsided, the deviation of head and eyes and spasticity had relaxed, the temperature was normal, and he was taking notice and feeding eagerly.

This satisfactory state continued for three days. Then his temperature suddenly rose to 104° F. (40° C.), subsequently reaching 107° F. (41.7° C.). No abnormal physical signs were found except for a slight reddening of the left ear-drum. Microscopical examination of the urine and an x-ray film of the chest showed no abnormality. Lumbar puncture produced a clear C.S.F. with a high chloride content (860 mg. per 100 ml.).

A left myringotomy was performed, but no pus was obtained. Hyperpyrexia (107° F.: 41.7° C.) persisted until his death in coma two days later.

Post-mortem Examination.—There was some pooling of blood in the subarachnoid space in the posterior fossa, together with blood-pigment staining. A venous plexus was present over the surface of the left cerebellar hemisphere and one of the vessels had ruptured, the aperture being filled with blood clot. In the substance of the left cerebellar hemisphere there was a vascular neoplasm 3 cm. in diameter, with haemorrhage into it and into the surrounding brain tissue. The left choroid plexus was thrombosed. No tumour was found in any other part of the nervous system and no cysts or tumours in any other organ. The middle ears were healthy and no other disease process was found.

Histological Examination (Professor J. Gough).—"The sections of cerebellum show a haemangioblastoma. In parts there are cellular tissues with ill-developed blood spaces; elsewhere there are cavernous spaces. There is surrounding gliosis and evidence of old and recent haemorrhage, resulting in the formation of haemosiderin and haematoidin. Intense macrophage activity is present."

This case is interesting in that the subarachnoid bleeding occurred abruptly in an apparently healthy infant aged 3½ months, and in the association between two capillary naevi in the head area and a venous plexus over the surface of the left cerebellar hemisphere with a haemangioblastoma in its substance. The sequence of events is thought to have been, first, rupture of one of the veins of the plexus overlying the cerebellum, producing subarachnoid haemorrhage, then an

interval of quiescence leading up to the final and fatal haemorrhage in the substance of the cerebellum containing the haemangioblastoma.

We wish to thank Mr. Melbourne Thomas for permission to publish this case; and we are indebted to Dr. D. C. Taylor and Professor J. Gough for the post-mortem examination and the histological report.

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Case of Rupture of Left Lower-Lobe Bronchus with Recovery

Traumatic rupture of the bronchus is a rare condition, and is seldom diagnosed. Many of the cases are fatal, as they are associated with severe crushing injuries of the chest. Kinsella and Johnstrud (1947) reported 38 cases. In the following case the rupture occurred without any fracture of the ribs, though presumably the chest must have been compressed, possibly by the motor-cycle falling on it.

CASE HISTORY

A man aged 24 met with a motor-cycle accident in December, 1946, and sustained concussion, multiple abrasions, and a fracture of the right humerus. He was admitted to the City General Hospital, Sheffield, where he recovered fairly quickly; he was discharged towards the end of January. In February, 1947, he became ill, left lower-lobe pulmonary pneumonia being diagnosed, and was re-admitted to hospital. He recovered on sulphonamide therapy, and was discharged. One year later he again became ill, beginning with a rigor and pain in the lower part of the left side of his chest. This lasted a few days, after which he got up and went about but did not feel very well. He had aches in various parts of his body, felt feverish, and had a fairly severe headache most of the time.

He was sent to the Royal Infirmary, Sheffield, as a case of pneumonia. He once more settled down, and his temperature became normal; an x-ray film, however, revealed a collapse of the left lower lobe. I was asked to see him, and after bronchoscopy and bronchography at the City General Hospital I diagnosed a probable

rupture of the left lower-lobe bronchus. The bronchogram showed failure of the left lower lobe to fill, and the bronchoscopy failed to disclose any evidence of entry to the lower lobe. The upper-lobe bronchus was rotated downwards, and the bronchoscope could be introduced into it quite easily. Lobectomy was advised and was carried out at the City General Hospital.

At operation it was found that the left lower-lobe bronchus had been torn partly across, and had only fibrous tissue on one wall, but there was some cartilage still in continuity with the main left bronchus. There was no passage between the lower lobe and the main bronchus, and it was therefore not necessary to suture the bronchus. The man made an uninterrupted recovery and was discharged a fortnight after operation.

The left lower lobe was completely bronchiectatic and the bronchi were filled with an albumin-like substance, apparently inspissated

mucus. It coagulated with formalin. Pus was not found in any of the bronchi, and the infection seemed to have died down.

The accompanying illustration shows the appearance of the specimen.

I am indebted to my chief assistant, Miss Slessor, for performing the bronchoscopy and for the bronchogram.

A. W. FAWCETT, F.R.C.S.

REFERENCE

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A Case of Spontaneous Rupture of the Uterus

In view of the comparative rarity of this condition the following case seems worthy of record.

CASE REPORT

A married woman was admitted at term at 2.45 a.m. She had been delivered fifteen months previously, with forceps, of a living child of 8 lb. 4 oz. (3.74 kg.). Post-natal examinations made on two occasions by a member of the consultant staff revealed no injury to the cervix or the vagina. Apart from retention of urine and a slight rise of temperature, the puerperium was uneventful.

The present pregnancy had been normal. Labour had begun at 12.45 a.m. with a show and contractions which were one in three minutes on admission. On examination the presentation was L.O.A. with the head in mid-cavity. The membranes ruptured at 3.15 a.m. and the cervix was fully dilated at 3.45 a.m. At 4.50 the head was visible but was progressing very slowly, and the foetal heart became weak and irregular. Five minutes later a particularly strong contraction was felt, after which no further contractions were observed. The patient complained of a dull ache in the abdomen, but her pulse and colour remained normal. On examination the abdomen was slightly tender and a group of limbs were felt very easily at the umbilicus, but the uterus appeared of uniform thickness above and below this point. The foetal heart was inaudible.

The history suggested a ruptured uterus, but in view of the absence of shock or haemorrhage it was decided that the foetus should be delivered. Pitocin was given immediately before. Under anaesthesia, the head was found in an anterior position with little caput or moulding and a foetus was delivered without difficulty, although the sub-pubic angle was rather narrow. It was stillborn and weighed 7 lb. 15 oz. (3.6 kg.). The cord was traced up the vagina into the peritoneal cavity through a tear in the lower segment and cervix. The uterus lay above and was well contracted. There was little haemorrhage and the patient's general condition was satisfactory.

At laparotomy a vertical tear was found in the lower segment, extending through the cervix into the anterior vaginal wall about 4½ in. (11.25 cm.). This was repaired in two layers. The patient became very shocked at the end of the operation, and an intravenous transfusion of 2 pints (1.14 litres) of Group O blood was given. After a prophylactic course of sulphadiazine and penicillin an uninterrupted recovery followed.

On discharge, on the nineteenth day, the vagina and cervix were healing satisfactorily. Two months after delivery the anterior vaginal wall was almost healed and the cervix completely healed.

COMMENT

This case is one of spontaneous rupture of the uterus in the course of a rapid labour with strong contractions. Rupture occurred when the head was still descending, though more slowly than earlier in the second stage. There was no evidence of disproportion, since the head was well flexed in an occipito-anterior position with little caput or moulding, the foetus being also smaller than the first baby. No sign of weakness or injury of the birth canal was found after the first confinement. The lower segment was not unduly thinned at laparotomy. The only apparent explanation would appear to be that the magnitude of the contractions caused the tension in the uterus to rise at such a rate that it ruptured before the tension could be released by downward movement and delivery of the head.

The case is also remarkable for the lack of constitutional disturbance associated with a tear 4½ in. long involving the lower segment, cervix, and anterior vaginal wall, there being no clinical evidence of shock till the close of the laparotomy nearly four hours after the time of rupture. The tear was situated almost in the midline, thereby avoiding the larger vessels, which may offer at least some partial explanation of these facts.

I wish to thank Mr. A. R. Lister for performing the laparotomy, for advice on the conduct of the case, and for criticisms of this report.

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