given 3 ml. of the B₁₂ concentrate on June 11, and during the period recorded she had no other anti-anaemic treatment.

I wish to thank Mr. J. T. Marsh, of Glaxo Laboratories, for his information about B₁₂ and his great help in preparing this note; to Glaxo Laboratories Ltd. for a supply of the material; to Dr. H. Joules, of Central Middlesex Hospital, for permission to publish this note; and to Dr. Discombe and the staff of the pathological department for their help with the haematology.

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Congenital Heart Disease and Dissecting Aneurysm of Pulmonary Artery

The following is a report of an unusual case of congenital heart disease in which the patient was able to lead a useful life as a shepherd until he died as the result of a dissecting aneurysm of the pulmonary artery at the age of 19.

CASE REPORT

The patient was admitted to Dundee Royal Infirmary on February 24, 1949, complaining of pain in the chest and breathlessness, which had begun four hours previously. He was born a "blue baby," but after an initial struggle for survival he suffered relatively little inconvenience, apart from breathlessness on exertion. He had measles and mumps in childhood, and after leaving school became a shepherd with his father. On the night of admission he was on the hills with the sheep, when he had a sudden pain in the left side of his chest and began to cough. He coughed incessantly for some time, with the production of blood-stained sputum, and he became breathless and cyanosed. He vomited twice on the way to hospital.

There was no family history of congenital heart disease or of any other illness, and no history of rubella during the mother's pregnancy.

On examination the patient was seen to be an underdeveloped but well-nourished youth. He was deeply cyanosed and severely dyspnoeic, preferring to lie on his side as breathing was almost impossible while lying on his back. There was pronounced jugular pulsation, thickening of the lips and nostrils, and marked clubbing of the fingers and toes. There was no oedema. The pulse rate was 120, of good volume, and regular. The apex beat was palpable in the sixth left intercostal space, 5½ in. (13.9 cm.) from the mid-sternal line. The upper border of cardiac dullness was in the third left intercostal space. The right border was 2½ in. (6.3 cm.) to the right, and the left 5½ in. to the left of the mid-sternal line. There was a systolic thrill over the whole praecordium, maximal in the second left intercostal space and pulmonary area. The heart sounds were loud and harsh, with a loud systolic murmur maximal in the second left interspace and the pulmonary area, and audible at the back of the chest. The blood pressure was 145/70.

The chest was enlarged to the left; expansion was greater on the right than the left. There was impairment of percussion note at the left base. The breath sounds were bronchovesicular and air entry was diminished at the left base. Harsh inspiratory rhonchi were heard throughout the chest. The liver extended 4 in. (10 cm.) below the right costal margin. There was no ascites. The haemoglobin was 110%, and the red cells numbered 6,200,000 per c.mm.

The patient received oxygen and improved a little, but he died suddenly at 6.30 a.m. the next day.

NECROPSY

The heart was grossly and symmetrically enlarged, weighing 36 oz. (1 kg.). It was globular in shape and slightly flattened antero-posteriorly. The right atrium was moderately dilated. The two ventricles and the interventricular septum were equally hypertrophied, being 2.5 cm. thick at the base of the heart.

There was a common orifice centrally, immediately above the thick interventricular septum, which had three cusps, one anterior and two postero-lateral. The common truncus arteriosus was divided 2 cm. above the cusps into aorta and pulmonary artery by an antero-posterior arched beginning of the normal septum. There was thus a large arteriovenous communication.

The aorta was hypoplastic, arising from the right side of the common trunk and arching to the right, upwards, and backwards, anterior to the right bronchus. It continued downwards on the right side of the thoracic vertebrae to the diaphragm. The left subclavian and carotid arteries originated from a common trunk. On the right these vessels arose from the arch of the aorta.

There was a gross, recent, subepicardial haemorrhage over the common truncus arteriosus and the pulmonary artery as it arose from the truncus. On opening the vessels there was seen to be a circumferential tear in the media of the left lateral aspect of the pulmonary artery 1 cm. above its origin (see Diagram). A large dissecting aneurysm was present, extending from the base of the ventricles into the terminal branches of the pulmonary artery, with a false subadventitial passage which admitted a little finger. The aorta and pulmonary artery were of the same diameter and thickness. The branches of the pulmonary artery in the lungs were much larger than normal. The myocardium and coronary arteries were healthy although hypertrophied.

The left lung was very small, as it was compressed by the heart, which lay mainly in the left hemithorax. The hilum was densely infiltrated by blood from the dissecting aneurysm of the pulmonary artery, and this had extended in places to the pleural surfaces mainly in the lower lobe. On section, both lungs showed perivascular haemorrhages in the lung substance.

The liver, kidneys, and spleen demonstrated chronic venous congestion. There was also a diaphragmatic occlusion of the pylorus, with a 2-3 mm. central aperture.

COMMENT

Although cases of congenital heart disease with a persistent truncus arteriosus are not uncommon, there seem to be few recorded cases in which the patient had lived to late adolescence and had been able to engage in an occupation requiring a certain degree of stamina.

There appears to be no other recorded case of death occurring in congenital heart disease due to a dissecting aneurysm of the pulmonary artery, and this must indeed be an unusual phenomenon. The factors determining the site and time of onset of the rupture of the endothelium of the pulmonary artery must remain the subject for conjecture.

The presence of three cusps to the common truncus, and the fact that the pulmonary artery branched off the common trunk, would seem to classify this case as type 4 of Humphreys (1932).

I am indebted to Dr. J. Gordon Clark for permission to publish this case, and to Dr. H. G. Morgan for the necropsy report.

Diagram by Miss Sylvia Treadgold.

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