anomalous intra-atrial septum was successfully divided. The pressure in the third atrium fell immediately from 40 to 8 mm. Hg. This is the fourth case in the literature to be treated successfully by surgery.

We are indebted to Dr. K. P. Ball, Central Middlesex Hospital, who referred the patient to us.

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normal. Electrophoretic strip, moderate increase in γ -globulin; normal pattern 10 days later. Stools: no parasites or cysts.

An electrocardiogram on admission suggested a recent posterior infarction, with elevated ST segment in standard leads II and III, and Q waves in leads II, III, and AVF (on

Serial electrocardiograms

Medical Memoranda

Myocardial Infarction in a Young Adult

In the last two decades it has become apparent that coronary artery disease does occur in young adults. Newman (1946) published a series of 50 cases, the youngest aged 20. Poe (1947) showed that in 280 unselected necropsies on American Service personnel between the ages of 18 and 40, coronary thrombosis was the cause of death in 3.2%.

CASE REPORT

A well-developed athletic young man aged 19, on holiday from Germany, attended the casualty department on July 27, 1957, having been awakened early that morning by a constant gripping substernal pain, radiating to both shoulders and made worse by deep breathing. He had no cough, no sputum, no haemoptysis, and no dyspnoea. The pain lasted for two hours. The previous day he had felt unwell after strenuous exercise. His past history included several attacks of tonsillitis, the last occurring several weeks previously. A routine medical examination, including an electrocardiogram the year before, had been normal. His mother had angina pectoris, and his father had had a myocardial infarct.

On examination, his temperature was 99° F. (37.2° C.). His tonsils were enlarged and inflamed, and large tender tonsillar glands were palpable. His pulse rate was 64, and regular. His blood pressure was 110/50, and there were no cardiac murmurs or signs of cardiac failure. The other systems were normal.

Investigations.—Haemoglobin, 99%; W.B.C., 5,000 (polymorphs 51%, eosinophils 5%)→8,000 (polymorphs 67%, eosinophils 12%)→5,000 (polymorphs 54%, eosinophils 4%). E.S.R., 13→6 mm. (Wintrobe). W.R. and Kahn test negative. Chest x-ray examination normal. Serum transaminase, 29 units; two weeks later it was 12 units. C-reactive protein, negative. Blood cholesterol, 174 mg./100 ml. Throat swab showed *Streptococcus viridans*. 120 units of antistreptolysin per ml. No L.E. cells. Urine

inspiration). Chest leads were normal. Serial records showed that T-wave inversion developed in lead II four days after admission (see Fig.). This was not present in the final tracing. Elevation of the ST segment settled over six weeks. Q waves remained in leads II, III, and AVF.

The patient had a second attack of substernal pain lasting an hour, 48 hours later, and ran a low-grade pyrexia for two weeks. Otherwise his convalescence was uneventful. His blood pressure rose to 140/80. After 10 days he developed an apical systolic murmur and a split A 2, which were still present on his discharge on September 19.

COMMENT

This case shows various features which have been observed in previous series. Coronary artery disease in young people is very much commoner in men than in women (30:1), and occurs in a mesomorphic type of build (Gertler *et al.*, 1951). A family history of ischaemic heart disease can be demonstrated four times more frequently than in a control group. The attack is often related to effort, and in 50% of the cases there are premonitory feelings, which at the time or in retrospect can be attributed to myocardial ischaemia (Yater *et al.*, 1948). This patient complained that the pain increased on breathing deeply, although there was no pleural or pericardial rub, a symptom which was noted in 10% of the cases of Yater *et al.*

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