Deeply Inverted T-Waves After Supraventricular Paroxysmal Tachycardia

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A 22-year-old white man was hospitalized on August 31, 1963 with a chief complaint of sudden onset of palpitation and dizziness which had occurred 24 hours prior to admission. His family and past history were negative. He had been in good general health.

Physical examination showed a well-nourished young man with a pulse rate of 300 beats per minute. His blood pressure was 100/75 mm.Hg.

His first electrocardiogram (Fig. 1) showed supraventricular paroxysmal tachycardia. Immediately after the intravenous administration of 0.8 mg. of lanatoside-C (Cedilanid) (Fig. 2), the tachycardia ceased and the patient felt better. The tracing (Fig. 2) taken one-half hour after digitalis demonstrated normal sinus rhythm, deeply inverted T-waves in leads 2, 3, aVF and V₃-V₆. Several subsequent electrocardiograms (Figs. 3, 4) showed same deeply inverted T-waves. Because of the T-wave findings, we suspected coronary heart disease. The laboratory tests, which

![Electrocardiogram of the Month](http://journal.publications.chestnet.org/pdfaccess.ashx?url=/data/journals/chest/21423/)

Figure 1: Electrocardiogram on admission, August 31, 1963. Figure 2: Electrocardiogram one half-hour after administration of 0.8 mg. lanatoside C intravenously.

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included complete blood count, urinalysis, blood electrolytes, SGOT, SGPT, and PBI, were normal. The thoracic roentgenogram showed a normal cardiac silhouette. The deep T-wave inversions persisted from August 31 to September 26, 1963.
SUPRAVENTRICULAR PAROXYSMAL TACHYCARDIA

and returned to normal by September 27, 1963 (Fig. 5). The patient's electrocardiogram was not altered after hyperventilation, effort, intravenous injection of atropine 0.5 mg. and oral potassium administered on September 5, 1963. A double Master exercise tolerance test (Fig. 6) on October 5, 1963 was normal.

The persistence of deep T-wave inversions for almost 27 days following paroxysmal tachycardia in a young man without manifestations of coronary disease may be termed "post paroxysmal tachycardia syndrome" which is characterized by: (a) deeply inverted T-waves following paroxysmal tachycardia, (b) persistence of T-wave inversions for about three weeks, (c) spontaneous reversion to normal of the T-waves, (d) normal laboratory tests and no electrocardiographic abnormalities following such procedures as hyperventilation, atropine injection or exercise test, (e) all of these findings occurred in a young patient.

It is important to study such young patients, bearing in mind that coronary disease may be present, but not manifested clinically at this age. Coronary arteriography may be helpful.

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LOBAR EMPHYSEMA AND CONGENITAL HEART DISEASE

Fourteen cases of congenital lobar emphysema of infancy are reported. Eight of these patients had congenital heart disease: ventricular septal defect in four cases, tetralogy of Fallot in two, and patent ductus arteriosus in two. All patients were operated upon with resection of the emphysemaious lobe or lobes with relief of the respiratory distress. There was one operative death and one postoperative death. Involvement of the right middle and left upper lobes was most common, with right middle lobe involvement being more frequent.


ROLE OF ADRENALS IN MAINTAINING LEVEL OF CARBOHYDRATE METABOLISM IN FAILING HEART

Biochemical investigation of rabbit heart muscle in the period of commencing heart failure (due to the progressive constriction of the aorta) has shown that the content of free and bound glycogen and pyruvic and lactic acids, did not change in comparison with controls. This means that there is an effective homeostatic mechanism in the organism which maintains an appropriate level of carbohydrate metabolism even with such demands on the energy metabolism of the heart muscle. The presumption that this homeostatic factor is adrenal was verified in experiments in which progressive constriction of the aorta was combined with bilateral adrenalectomy. In the experimental conditions, a significant drop of free and bound glycogen, as well as of lactic and pyruvic acids took place in the myocardium. Based on this fact, the view is expressed that adrenal hormones play an important role in the adaptation of carbohydrate metabolism to gradually increasing pressure work of the heart.


MYXEDEMA HEART DISEASE

Nine patients with myxedema heart disease were studied by carbon dioxide angiocardiography in an attempt to evaluate the incidence of clinically demonstrable pericardial effusion. In seven of these, significant effusion was demonstrated. Pericardial effusion is the most common finding in "Myxedema heart". Because the effusion may respond dramatically to thyroid therapy, differentiation between true enlargement of the heart and pericardial effusion is an important consideration. As in several of the patients clinical signs of myxedema were relatively minor, the role of the radiologist in making the diagnosis is underlined.