primarily or secondarily involved. The sex changes represent a true precocity in the case of the sex-gland tumours but a pseudo-precocity only in the juvenile adeno-genital syndrome. The growth curve in macrogenitosomia praecox is unduly precipitate in comparison with the normal, and the short-limbed, disproportioned skeleton which is found is due to premature fusion of the long bone epiphyses before the active limb lengthening and "springing-up" period of the second dentition.

[A full list of references will appear next week at the conclusion of the second lecture.]

AURICULAR FLUTTER CONTINUING FOR TWENTY-FOUR YEARS

BY

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In May, 1912, I saw a clergyman aged 53 who related that he had suffered from paroxysms of tachycardia since his boyhood, and that three years before I saw him his pulse had become persistently rapid, varying only between 140 and 160 beats per minute. He was under my observation for a month, during which I took many electrocardiograms from him. These showed auricular flutter, the auricular rate being usually between 280 and 300, occasionally falling a little lower or rising a little higher. Except while under digitalis, the ventricular was always half the auricular rate. Slowing could only be obtained by digitalis if the patient was nauseated, and by strophanthus only if the patient suffered purgation; both forms of drug treatment were consequently abandoned.

It is to be noted that the rates obtained electrocardiographically strikingly confirmed the patient's own statement of rates; he was an intelligent man and unusually accurate in observation. His case was reported in *Heart*, 1912, 4, 179 (Case 3), and his curves are illustrated by Fig. 28 of that paper (see Fig. 1). He was anxious about

FIG. 1.

himself and suffered easily from fatigue, but no signs of cardiac affection other than that of flutter could be found in him.

A few years after I first saw him he retired from work in a very busy parish, but continued in lighter posts until shortly before he visited me in June, 1933, when he was in his seventy-fourth year. He then told me that his heart had continued to beat rapidly and regularly during the intervening twenty-one years, but that he had enjoyed very fair health, though unable to walk more than a mile without undue fatigue. He said that his heart still beat rapidly, though not so rapidly as formerly, the rhythm being usually 84 to 102 and regular. I found him very

alert and vigorous for his age, presenting no other signs of heart affection but the old-standing tachycardia. His auricles were still fluttering, though the rate in the curves was 210 to 214, the ventricles responding at half this rate (Fig. 2). This change of rate and prolongation of

FIG. 2.

the initial phases of his ventricular curve were the only notable features of the electrocardiogram.

He writes in 1937 to say that his condition is unchanged and his health satisfactory.

Commentary

The case is of exceptional interest for three reasons. First, the auricles seem to have fluttered without cessation for twenty-four (if not twenty-seven) years. Secondly, although the ventricle during the greater part of this period has been driven at very excessive rates, the efficiency of the heart has not been impaired by its increased energy expenditure. Thirdly, the rate of auricular beating has fallen about 80 beats per minute. This fall might be attributed to lengthening of the circular path around which the wave travels, or more probably to its slower speed of movement. It would be interesting to know if lowering of rate is usual in auricular flutter as age greatly advances.

P. Duval and J.-Ch. Roux (*Presse méd.*, March 6, 1937, p. 353) draw attention to the different reactions of individuals to similar surgical interventions. The incessant breaking down and reconstruction of tissue frees certain toxic albuminoids in the blood, and it is suggested that the varying degrees of susceptibility to the products of disintegration may account for the variations in resistance shown by certain individuals to different crises. This variability is particularly noticeable following surgical treatment or burns, when such intoxication takes place. Two patients may undergo identical operations under exactly similar conditions, but whereas one will suffer a severe post-operative reaction, the other will show no such symptoms or signs. It is suggested that the reason for this is the autogenous susceptibility of the first patient and the lack of susceptibility in the second. It is also known that the reaction which follows a second operation is usually more severe than that which followed the first, showing that the original operation brought about a condition of increased susceptibility in the patient. The same variability is noted in two similar cases of burns of equal severity; one patient died after four days from severe intoxication, while the other survived this period of intoxication and only succumbed on the twelfth day to infection. Analysis showed that the biological reactions were much stronger in the first case than in the second. Similar conditions are seen in other lesions such as severe bruising, haemarthrosis, haemothorax, or jaundice.