A CASE OF AURICULAR FLUTTER.

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Auricular flutter is an interesting abnormality of cardiac rhythm, that presents problems in diagnosis and treatment, that are of importance, in as much as they affect the ultimate prognosis and the capacity for work in a patient, whose heart muscle may not be otherwise seriously damaged.

**Case Record.**

**History.** M.E., female, single, aged 41 years, clerk, attended Out-patient Department of the Royal Chest Hospital on October 20th, 1934, complaining of "heart attacks."

During the attacks, she had acute dyspnœa, a feeling of suffocation, and palpitation, being conscious of the rapid beating of her heart. She has had three or four attacks but has been quite well in the intervals and able to carry on her work. The first attack occurred about one year ago, when she had a cold; this and the subsequent attacks lasted for about half an hour. Each attack has occurred in the early morning when in bed; both the onset and the offset being sudden. The present attack that brought her up to the hospital had, however, already been in progress for three days, and had incapacitated her from work.

**Past history:** no rheumatic fever; no serious illness. **Family history:** nothing of relative importance.

**Examination** (20/10/34). Slight definite enlargement of the heart. A diastolic rumble and a soft systolic murmer audible at the apex. Pulmonary second sound accentuated. **Rate:** 156 per minute, regular. Pressure on right vagus nerve in the region of the cartoid sinus produced temporary slowing of rate to about 70. Auricular waves seen in the veins of the neck at double the ventricular rate. No signs of congestive heart failure present. No other abnormal condition in cardio-vascular or other systems found.

The electrocardiogram showed auricular flutter with **2 : 1** block, the auricular rate being **328** and the ventricular **164** per minute (Fig. 1.).

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**FIG. 1.—M.E., Electrocardiogram showing auricular flutter with 2 : 1 block; auricular rate = 328 per minute. Time-marker in tenths of a second.**
The cardiac diagnosis, therefore, was:—

Etiological:—Rheumatic.

Structural:—Slight cardiac enlargement: mitral stenosis.

Functional:—Good exercise tolerance: auricular flutter.

Course. Admission to the hospital was recommended but refused, and she was, therefore, put on quinidine and remained at home in bed under the supervision of her private doctor. The abnormal cardiac rhythm continued, so she was admitted on 8th November, 1934.

On 9th November, 1934 an electrocardiogram was taken immediately after digital pressure had been made on the right vagus in the region of the carotid sinus; this showed auricular flutter with 8:1 block, rapidly changing to 4:1 and escaping again to 2:1 block in spite of continued pressure (Fig. 2.).

During the next few days the auricular flutter alternated with fibrillation, but during most of the time flutter was present.

Quinidine was then given for four days up to a dose of thirty-six grains a day; this failed to restore normal rhythm.

On the next evening she was given two drachms of tincture of digitalis, and about six hours later her heart rate suddenly dropped; the next morning she was fibrillating, and this was confirmed by an electrocardiogram (Fig. 3.).

The fibrillation continued and two days later digitalis was stopped. As the fibrillation was still present ten days after digitalis had been discontinued, she was given another course of quinidine, receiving forty-eight grains in two days; no
change to normal rhythm took place. It was therefore decided to keep her on digitalis and try to maintain the fibrillation rather than allow the flutter to return.

She was last seen on 16th March, 1935, as an out-patient, the irregularity was still present and the patient was back on full work.

**Discussion.**

**Symptoms.** Auricular flutter is usually found in an elderly patient and may be seen either as a case of congestive heart failure, or as a case of palpitation or "heart attacks." The rapid beating of the heart in auricular flutter throws an increased load on the heart muscle and if this is in poor condition, congestive failure will rapidly ensue. Therefore, in this type of case it is the condition of the heart muscle that is the most important factor. In the case of the patient recorded above, whose exercise tolerance was good between the attacks, and in whom the heart was only slightly enlarged, the main symptoms, of which she complained, were "heart attacks" with palpitation; the latter is the common symptom in cases without congestive failure.

**Diagnosis.** This case is one of those in whom the flutter was paroxysmal at first and then became permanent; paroxysmal flutter is unusual, and is commonly diagnosed as paroxysmal tachycardia unless an electrocardiogram is obtained in the attack. This is the chief differentiation that one is called upon to make in a case presenting itself with a rapid regular tachycardia of abrupt onset. Paroxysmal tachycardia rarely lasts for more than ten days; so, if a patient is seen for the first time after the abnormal rhythm has been established for more than ten days, the chances are most strongly in favour of the correct diagnosis being auricular flutter. Both these conditions are unaffected by rest or exertion, which excludes the physiological tachycardias, although very rarely the rate is doubled in flutter during exercise, owing to the abolition of the 2:1 or other heart block.

Since the auricular rate in the case of flutter is between 240 and 360 per minute and some degree of heart block is always present, the usual ventricular rate lies between 120 and 180; in paroxysmal tachycardia the rate of the heart is most commonly above 180 per minute. Hence, if a heart is found to be beating during a heart attack at a rate of 160 or less and is unaffected by rest, it is a case of auricular flutter; if the rate is 180 or over per minute, it is an example of paroxysmal tachycardia.

Vagal pressure in the region of the carotid sinus not infrequently causes a heart with paroxysmal tachycardia to revert to normal rhythm. Whilst vagal pressure usually exerts no influence in a case of auricular flutter, temporary slowing may occur, owing to increased heart block; the case here described is illustrative of this phenomenon. This is a valuable test in suspected cases.

In some cases, as in this patient, the rapid auricular waves can be seen in the venous pulsation in the neck.

The final and certain diagnosis is made by the electrocardiograph. In all doubtful or suspected cases an electrocardiogram should be taken.
The diagnosis of auricular flutter, therefore, rests upon three points:—the history, the careful examination of the patient, including observation of the effect of vagal pressure, and an electrocardiogram.

**Treatment.** Without treatment, auricular flutter may spontaneously change to auricular fibrillation; in the case described here this change occurred but was only temporary. With treatment it is possible in a fair percentage of cases to change the flutter to fibrillation and maintain this rhythm permanently; moreover, normal rhythm can sometimes be restored. This is a necessary step in the management of a case, since flutter cannot be permanently controlled by drugs except with difficulty, whereas fibrillation reacts readily to digitalis.

Two drugs are of use in the treatment of this condition, namely quinidine and digitalis.

Quinidine is much less effective in flutter than in fibrillation, but is sometimes worth a trial. In this patient, quinidine had no effect on the flutter; when used again after fibrillation had been established it failed, although it should be mentioned that only a small quantity was given, since the patient desired, for economic reasons, to return to her work quickly.

Digitalis, however, increases the heart block and thus slows the ventricular rate; it has to be used in large doses, and therefore the patient should be in bed during the administration. When fibrillation replaces the flutter, the digitalis should be stopped. Frequent electrocardiograms are essential for the effective control of treatment by digitalis in such cases. If normal rhythm does not supervene, the digitalis can be started again and the fibrillation made permanent. This case changed to fibrillation after a single large dose of the Tincture of Digitalis, but did not resume normal rhythm. She is now able to earn her own living as a clerk and is much better than when she had auricular flutter.

**Summary.**

A case of auricular flutter has been recorded, showing the effect of vagal pressure, and the close relation between flutter and fibrillation. Attention has been directed to the use of digitalis in the treatment and the importance of the electrocardiograph in the diagnosis and control of such cases.

**Reference:**

A Case of Auricular Flutter

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