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CASE REPORT

Ventricular Tachycardia Associated with Administration of Thioridazine Hydrochloride (Mellaril):

Report of a Case with a Favourable Outcome

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THIORIDAZINE, a widely used antipsychotic drug, has been found to induce a quinidine-like effect on ventricular repolarization. In two patients[1] alternating patterns of heart block and ectopic rhythm preceded death.

The following report describes a patient without clinical evidence of heart disease who was given 1500 mg. of thioridazine per day for about 10 weeks. Laboratory data were within normal limits. Electrocardiograms taken on September 9, 1963, and October 1, 1963 (Fig. 1), six weeks after initiation of therapy at this dose level, showed increasing bradycardia and prolongation of the QT interval. The second tracing also revealed frequent atrial premature beats (Fig. 1, V4) giving rise to periods of bigeminal rhythm. In spite of the prolongation of QT interval and the bifid T-waves in the right precordial leads noted, the patient remained in good physical health and therapy was not discontinued.

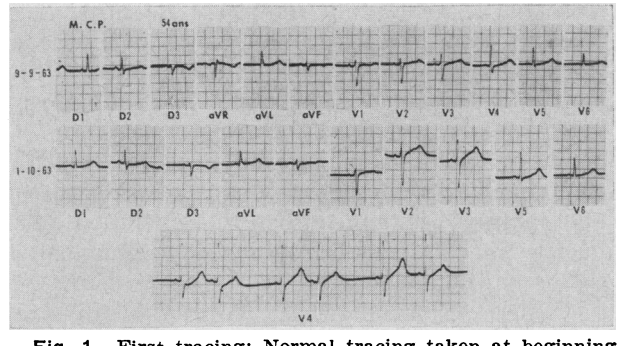

Fig. 1.—First tracing: Normal tracing taken at beginning of treatment. Second tracing: T wave changes due to thioridazine hydrochloride (Mellaril) in V2 and V3 with periods of bigeminy.

About a month prior to the incident reported herein, the patient complained of dizziness and fainting spells. These symptoms were considered to be due to the usual side effects of thioridazine therapy. On October 25, 1963, the patient suddenly became unconscious and passed into a state of shock.

An electrocardiogram showed ventricular tachycardia (Fig. 2A). Oxygen was given under positive pressure by mask while external cardiac massage was instituted. Methoxamine hydrochloride, 40 mg. in 5% dextrose solution, was administered intravenously. Afterwards, 40 mg. of procaine amide was given by the intra-

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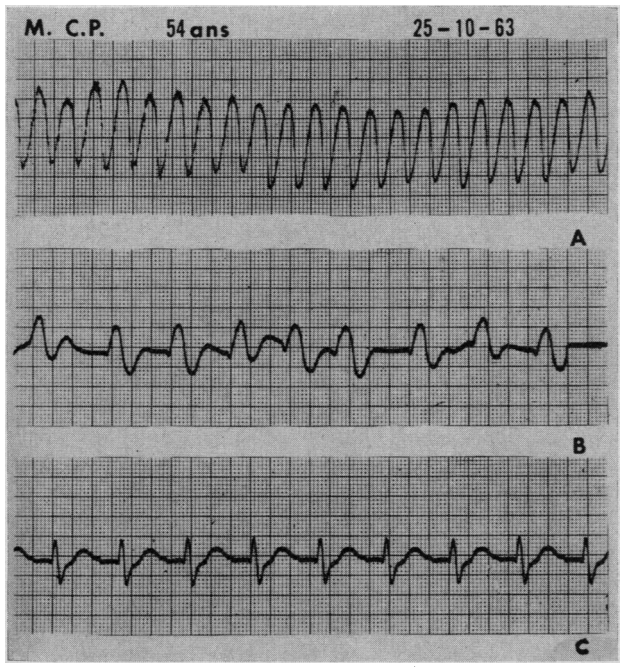

Fig. 2.—A: Ventricular tachycardia. B: Effect of procaine amide on the ventricular tachycardia. C: Return of sinus rhythm with first-degree A-V block.

cardiac route, followed by 60 mg. intravenously. In a subsequent electrocardiogram (Fig. 2B) the rapid ventricular tachycardia was replaced by a slow irregular rhythm with wide QRS complexes, probably caused by the procaine amide. Later, sinus rhythm was established with a PR interval of 0.24 second (Fig. 2C). The total duration of cardiovascular collapse was about two hours. The blood pressure rose to 120/80 mm. Hg but had to be maintained by vasopressor drugs for several hours. The medication had been stopped immediately, and an electrocardiogram taken two hours later (Fig. 3 [25-10-63]) showed the T-wave changes due to thioridazine.

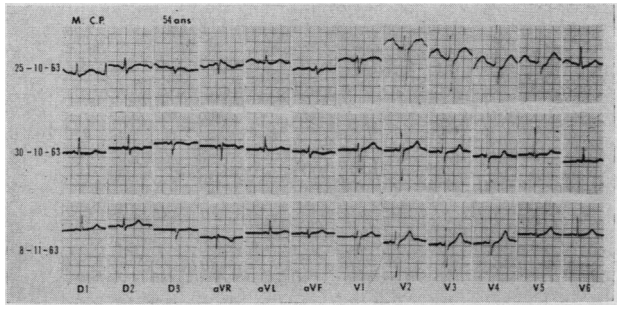

Fig. 3.—Upper tracing: Effect of thioridazine hydrochloride (Mellaril) observed in V2 and V3 with widening and notching of T wave. Lower tracings: Gradual return to normal tracing.

During the ensuing days the patient's condition improved. Electrocardiograms taken on October 30, 1963, and on November 8, 1963 (Fig. 3), were essentially within normal limits and showed no signs of thioridazine intoxication. At no time were there any clinical or electrocardiographic signs of myocardial infarction, and the patient never complained of any precordial pain after the accident.

The physical examination was normal except for a positive Hoffmann's sign on the right, and clonus of the right foot. These physical findings disappeared gradually and were attributed to cerebral ischemia during the attack.

A right and left coronary arteriogram was performed at the Hôtel-Dieu de Montréal by Dr. Jean de L. Mignault, and was normal. This examination was carried out in order to exclude a possible coronary origin of this cardiac accident.

These data, and those reported by Kelly, Fay and Laverty,[1] indicate that thioridazine can occasionally modify ventricular repolarization, producing changes similar to those associated with the use of quinidine or procaine amide. Moreover, in the case described, it appears that the medication may have been related directly to the development of ventricular tachycardia. This patient had previously been in a satisfactory physical condition, free from clinical or electrocardiographic evidence of heart disease. After the episode, the electrocardiogram returned to normal.

In view of these facts, the use of routine electrocardiograms is suggested for patients undergoing long-term treatment with thioridazine or receiving doses of thioridazine above the manufacturer's recommended maximum daily dosage of 800 mg.; changes in the electrocardiographic pattern during treatment warrant extra care and possibly discontinuation of the medication.

SUMMARY

A case of ventricular tachycardia induced by thioridazine has been reported, in which a favourable outcome was obtained. The development of changes in the electrocardiographic patterns during the administration of such medication calls for strict observation of the patient and possibly discontinuation of the medication.

The changes observed are similar to those seen in quinidine intoxication. The electrocardiograms showed increasing bradycardia, prolongation of the QT interval, and bifid changes of the T-waves. Bigeminal arrhythmia due to atrial premature beats appeared before the development of ventricular tachycardia.

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RÉSUMÉ

Un malade recevant des doses de 1500 mg. de thioridazine (Mellaril) par jour depuis quelques semaines a présenté un épisode de tachycardie ventriculaire avec état de choc. Des électrocardiogrammes pris avant l'accident ont montré de la bradycardie avec allongement de l'espace QT et crochetage de l'onde T dans les dérivations précordiales droites. Des troubles du rythme sont également apparus avec périodes de bigéminisme avant l'apparition de la crise de tachycardie ventriculaire. Après la crise, l'électrocardiogramme est revenu à la normale. Une coronographie droite et gauche a été exécutée afin d'éliminer une origine coronarienne possible à cet accident de tachycardie ventriculaire. Cette coronographie est revenue normale. A la lumière de cette observation il est recommandé de surveiller attentivement les malades soumis à des doses importantes de thioridazine. L'apparition de troubles du rythme ou des modifications de la phase terminale doit commander l'arrêt du médicament ou tout du moins la réduction de la dose.