Phonocardiography and Venous Tracings

Pulmonary Heart Disease and Tricuspid Insufficiency in a Drug Addict*

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The patient, a 37-year-old Negro man, a heroin addict, was admitted to the hospital with dyspnea, weakness, and a productive cough. He was cachectic and had a history of "inactive pulmonary tuberculosis." He was moderately cyanotic, and had grade 1 ankle edema. Engorgement of the jugular veins and hepatomegaly were noted with obvious systolic pulsations of both the veins and liver. The apex impulse was in the sixth left intercostal space; the heart was enlarged to the right. A blowing pansystolic murmur and a mid-diastolic rumble were audible from the apex to the sternum. The second sound was single and loud. The ECG showed right axis shift, deep S waves from V2 to V4, and a grade 1 A-V block. X-ray film showed marked cardiac enlargement and a dilated pulmonary artery, irregular infiltrates in the upper two-thirds of the right lung and a 2 cm cavity at the right apex.

The phonocardiogram (PCG) without filter (Fig 1) showed a very large diastolic vibration coinciding with the phase of rapid filling, reinforced by atrial contraction (III plus IV sound). The PCG with high-pass filter (Fig 2) showed a pansystolic murmur and a summation gallop (III and IV sounds) with a short mid-diastolic rumble.

The jugular and hepatic tracings showed a large, plateau-like systolic wave which fused with the subsequent V-A wave.

The final diagnosis was: pulmonary hypertension and tricuspid insufficiency. The systolic murmur was attributed to the tricuspid insufficiency, and the diastolic rumble was considered evidence of "relat..."
PULMONARY HEART DISEASE AND TRICUSPID INSUFFICIENCY

It should be noted that the clinical data plus ECG, PCG, and venous tracings had allowed us to make the correct cardiologic diagnosis prior to cardiac catheterization.

It is known that a tricuspid regurgitant murmur may be audible even at the apex, and that a diastolic rumble may be heard without any gradient across the tricuspid valve. Unfortunately both types of murmurs are often incorrectly evaluated.

The usefulness of jugular and hepatic tracings for the recognition of tricuspid insufficiency should be emphasized.

REFERENCES

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THE DISCOVERY OF CAPILLARY CIRCULATION

Marcella Malpighi (1628-1694) was born in the year that the DE MOTU CORDIS was published; and, like Harvey—and like Vesalius—he was to know success while still very young; he was still in his twenties when appointed professor of theoretical medicine at Pisa.

Malpighi was the first to use the microscope for systematic anatomic research, to investigate the structure of individual organs of the body, and in the process, he completed Harvey's work by finding how blood flows to and from arteries to veins.

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