High frequency clicks, arising as a consequence of valvular heart disease, are generally confined to the period of ventricular systole. Several investigators have described the diastolic murmur of tricuspid stenosis as "scratchy" and of higher pitch than that associated with mitral stenosis.

We describe here a presystolic click which probably arose from the opening of a stenotic tricuspid valve during atrial contraction. Observation and recording of the simultaneously recorded external pulses permitted proper assessment of seemingly complicated auscultatory findings.

CASE REPORT

A 25-year-old woman with known valvular heart disease was referred for investigation. Cardiac auscultation revealed diastolic murmurs with presystolic accentuation at the mitral and tricuspid areas. The presystolic murmur at the tricuspid area was particularly high frequency in quality. At the aortic area a loud initial click was followed by a pause, a lower frequency sound and a systolic murmur. An arterial decrescendo diastolic murmur was heard at the left sternal border. Examination of the carotid pulse indicated that the click at the aortic area preceded left ventricular ejection (Fig 1). In addition, the presystolic click was louder during inspiration. External jugular phlebography confirmed presys-
In conclusion, external pulse recording is a useful graphic technique for the elucidation of unusual presystolic clicks. Further study, including echocardiography, may shed light on this rare auscultatory finding.

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Discussion

The tricuspid valve lesion noted in this subject was characteristic of a stenotic diaphragm held as a rigid tambour by its circumferential attachment to a dilated annulus. The presystolic click might have resulted from sudden downward tensing of the diaphragmatic valve during atrial contraction. Augmentation of the click during inspiration and its timing with the presystolic tricuspid area murmur suggest that it arose from the tricuspid valve and not as a consequence of premature mitral valve closure. Inspection of the preoperative aortic area phonocardiogram, without other reference tracings, suggests a loud first heart sound, midsystolic clicks and late systolic murmur.