Introduction: Atrial tachycardia (AT) is rarely dependent on both atria. In this case report we describe a unique atypical atrial flutter involving both the left atrium (LA) and the right atrium (RA), utilizing an anomalous connection between the left endocardium and epicardium.

Methods: Case report.

Result: Biattrial tachycardia was formed by the anterior line of LA descending the atrial septum. Although we ablated by the mitral isthmus line for left inferior pulmonary vein to mitral annulus (MA), the AT did not terminate. We performed the activation map again. In the circuit of AT, the mitral isthmus was blocked, and a circuit that excitedly propagated from the left atrial appendage via conduction from the LA epicardium was inferred. Therefore, AT was terminated by conducting a superolateral line from left superior pulmonary vein to MA.

Conclusion: We report a successful case of ablation with the superolateral line for Biattrial tachycardia.