Introduction: Multiple accessory pathways (AP) are identified by the change of the earliest activation after ablation to the earliest activation site by the initial mapping. We describe a case of dual anterior APs that were identified in a first activation map with Rhythmia.

Methods: N/A

Result: A 69-year-old male who suffered from recurrent palpitations was referred to our institution. 12-lead ECG showed no delta wave and no antegrade AP conduction was observed by the intracardiac electrical mapping. Right ventricular apex (RVa) pacing showed a retrograde left side AP and ventricular premature stimuli induced narrow QRS tachycardia. This arrhythmia demonstrated the reset phenomenon by RVa extra-stimuli, and we diagnosed it as orthodromic atrioventricular reciprocating tachycardia. Initial activation map with Rhythmia at the mitral annulus (MA) during RVa pacing revealed that the earliest atrial activation was at the anterior MA (AP1). In the same activation map, we could identify another AP (AP2), that conducting to left atrium at 18mm lateral side of MA from the AP1 and 15ms later than the AP1. Ablation at the earliest atrial activation at the anterior MA (AP1) changed the earliest activation to the slightly lateral side of MA, and radiofrequency (RF) energy application at this site successfully eliminated the AP conduction.

Conclusion: High spatial resolution mapping with Rhythmia visualized dual accessory pathways within 2cm in a single mapping, that was able to lead effective and successful ablation.