Introduction: Termination without global capture was reported as the finding to identify critical part of the re-entrant circuit for scar-related ventricular tachycardia. However, there were few reports about this phenomenon in atrial tachyarrhythmia.

Methods: N/A

Result: The present case was a 46-year-old woman with past history of open-cardiac surgery using superior trans-septal approach for mitral valve prolapse. Atrial tachycardia (AT) occurred after the surgery and it was refractory to anti-arrhythmic drugs, and then she was admitted to our hospital for catheter ablation. Electroanatomical mapping with CARTO3 system revealed that AT was macro-reentrant AT involving incision line at right atrium (RA). Fragmented continuous potentials were identified at lower lateral RA adjacent to incision line. Single atrial pacing at this site was performed to avoid phrenic nerve injury, and it could terminate AT without global capture. AT could not be inducible due to bump of ablation catheter, then radiofrequency applications were performed at this site under sinus rhythm. The conduction block was confirmed in the RA by differential pacing. There was no recurrence of AT for 2 years after catheter ablation.

Conclusion: We reported the rare case of termination without global capture in the patient with incisional AT. This phenomenon is an important finding showing a critical slow conduction zone in atrial tachycardia as well as ventricular tachycardia.