Objective: Our objective was to evaluate the mechanism of atrial tachycardia (AT) induced by atrial pacing using EnSite NavX multi-electrode mapping system after extensive encircling pulmonary vein isolation (EEPVI) for the paroxysmal atrial fibrillation (AF). Methods: We evaluated 100 consecutive paroxysmal AF patients undergoing EEPVI (all were first procedures, age 60±11 years, 66 males, LA diameter 34±5mm). Rapid atrial pacing up to 170ms was performed to induce AF or AT after EEPVI. Activation mapping of induced AT was performed using EnSite NavX. Results: EEPVI was completed in all patients. After EEPVI, AF was induced in 13 patients and AT was induced in 31 patients (34 AT). Atrial activation sequences of 27 AT were evaluated. In the 27 AT, 22 (81%) were macro-reentrant AT and 5 (19%) were focal AT. In the 22 macro-reentrant AT, 11 were peri-mitral AT with a cycle length (CL) of 200±25ms, 5 were roof-dependent AT (CL 202±56ms, 3 around left PV and 2 around right PV) and 6 were atrial flutter around tricuspid annulus (CL 212±22ms). Conclusions: Majority of AT induced by atrial pacing after the completion of EEPVI are macro-reentrant AT. Three reentrant circuits, i.e., around mitral valve, tricuspid valve and pulmonary vein, relate with maintenance of the macro-reentrant AT. Keywords: atrial fibrillation, atrial tachycardia, PV isolation