Introduction: Radiofrequency catheter ablation for Mitral-Isthmus dependent AFL is occasionally challenging due to the remaining of epicardial conduction via CS or Marshall vein. We report the validity of additional chemical ablation for Mitral-Isthmus dependent AFL that were experienced in our institution.

Methods: 11 patients (male: 7, mean: 69 years old) of Mitral-Isthmus dependent AFL were investigated and ablated as a first step as follows; ① endocardial mitral line ② LPV ridge ablation ③ CS encircling ablation. And if complete bidirectional block was not performed, ④ Chemical ablation for Marshall vein was added. Complete bidirectional block was achieved in 6 of 11 cases by using ①~③ steps, and 4 cases were added ④, and 1 case could not be performed ④ due to lack of Marshall vein.

Result: The course of the cases which were achieved complete bidirectional block is progressing favorably.

Conclusion: There is a limit to achieve a complete bidirectional block of mitral isthmus in using radiofrequency catheter ablation only, and in such cases, additional chemical ablation for Marshall vein is useful.