Short And Medium Term Follow-up Results Of Modified Big-box Ablation Technique ismics2022.0110010

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- **BACKGROUND:** Traditional Cox Maze IV is the golden standard for atrial fibrillation treatment in cardiac surgery whereas which still has areas for improvement. We utilized a simpler modified Big-Box ablation technique, and evaluated its efficacy and safety in short and medium term follow-ups
- **METHODS:** 560 patients with organic heart disease complicated with atrial fibrillation who underwent radiofrequency ablation at the same time in the department of cardiovascular surgery of our hospital from 2013 to 2020 were analyzed retrospectively. According to different ablation routes of left atrium, they were divided into Modified Big-Box group （220 cases） and traditional Cox Maze IV group （340 cases）; The baseline data such as age, male/female ratio, course of atrial fibrillation, left atrial diameter, other cardiac operations performed at the same time, perioperative data, and the maintenance rate of sinus or atrial rhythm at 3 months, 12 months and an average follow-up of 4.5 years were collected. The differences between the two groups were statistically analyzed.
- **RESULTS:** There was no significant difference in preoperative baseline data between the two groups. There were 2 cases of perioperative death in the modified group, 4 cases of death in the traditional group, 3 cases of re-thoracotomy hemostasis in the traditional group, 1 case of re-thoracotomy hemostasis in the modified group and 1 case of wound infection in each group. The duration for temporary cardiac pacemaker use in modified group was significantly longer than that in traditional group (P = 0.03), and the elimination rate of atrial fibrillation in modified group was better than that in traditional group (P = 0.04); the elimination rate of atrial fibrillation in modified group was higher than that in traditional group at discharge and 1 month after operation (P = 0.03), there was no significant difference in the maintenance rate of sinus or atrial rhythm between the two groups at 3 months, 12 months and an average of 4.5 years of follow-up; the maintenance rate of sinus or atrial rhythm in the traditional group after 12 months was significantly higher than that at 1 month of follow-up (P = 0.04); there was no significant difference in duration of aorta cross clamp time , radiofrequency ablation time, cardiopulmonary bypass time and ICU time between the two groups (P = 0.25, 0.29, 0.21 and 0.17, respectively)
- **CONCLUSIONS:** Atrial fibrillation complicated with organic heart disease could be treated with modified Cox maze surgery as the standard treatment when performing open heart surgery. Compared with the traditional ablation line, modified Big-Box technique simplifies the operation and has better transmural effect.

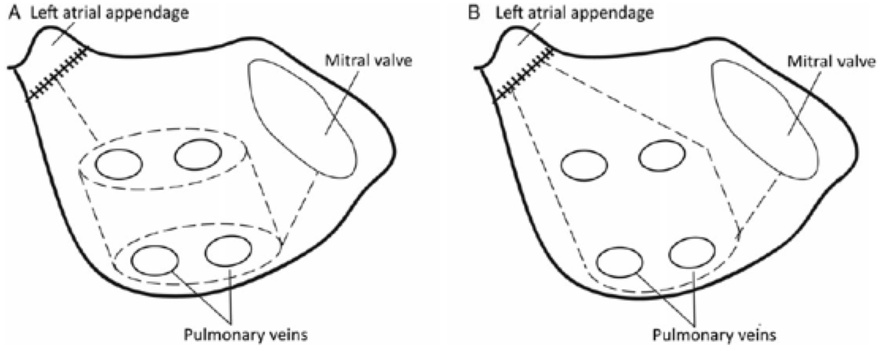


Figure 1: (A) Cox maze IV and (B) modified Cox maze IV procedure lesion sets.

Figure from: Yingqiang Guo, et al. Interact CardioVasc Thorac Surg. 2016; 23: 856-60