

## Editorial



# The Empire Strikes Back?

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Since Cox et al.<sup>1)</sup> first reported their groundbreaking results of the maze procedure in 1987, left atrial appendage (LAA) has been considered as the den of the Dark Force.<sup>2)</sup> When a patient has atrial fibrillation (AF), thrombi originating from LAA can attack vital organs especially central nervous system, resulting in a morbid stroke.<sup>2)</sup> In the United States, more than one hundred-thousand people suffers from this type of embolic stroke every year.<sup>3)</sup> As scientists continuously struggled to fight against this catastrophic consequence of AF, the maze procedure has evolved from the original cut-and-saw method to the minimally invasive Cox-maze IV procedure using various energy devices such as cryotherapy and/or radiofrequency ablaters.<sup>4)</sup> Nowadays, the average success rate of the maze procedure reaches up to ninety percent.<sup>5)</sup> On the journey of evolution, LAA occlusion has played a central role in preventing postoperative recurrence of stroke. However, a partial reduction of atrial contractile reserve may be the concern in terms of cardiac function.<sup>6)</sup>

In this issue, Song et al.<sup>7)</sup> present a case-control study entitled “Is It Safe to Preserve Left Atrial Appendage During Maze Procedure?”. They retrospectively compared the clinical outcomes in 113 patients in the LAA preservation group with those of 75 patients of occlusion group using a propensity score-matched analysis. After a median follow-up period of 44 months, there was no significant difference in the rate of freedom from stroke, even though 2 patients in the preservation group (3.8%) experienced ischemic stroke. Given the statistically significant difference in left atrial mechanical contraction observed in the 1-year follow up echocardiography, they concluded that the preservation of LAA could improve left atrial function.

Many cardiac surgeons who perform the maze procedure grapple with the balance between the risk of stroke and suboptimal atrial function.<sup>6)</sup> Given that the average annual incidence of stroke in the patients with AF is considered to be 4–5%,<sup>3)</sup> it will be satisfactory if the postoperative incidence of stroke after the maze procedure is lower than that. On the other hand, in terms of LAA preservation, it can be said that it is more advantageous from the perspective of cardiac function if the atrial kick is restored by returning to a normal sinus rhythm. However, if AF persists postoperatively, the beneficial effect of LAA preservation will be negated. Without the aid of blood thinner, the patient may suffer from embolic stroke, which would diminish the patient’s quality of life and satisfaction.<sup>8)</sup> That is the dilemma.

**Data Sharing Statement**

The data generated in this study is available from the corresponding author upon reasonable request.

**Author Contributions**

Conceptualization: Lim C; Investigation: Lim C; Validation: Chang HW; Visualization: Lim C; Writing - original draft: Lim C; Writing - review & editing: Chang HW.

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Does the Empire Strikes Back? Rather than New Hope? We have always been concerned about the long-term risk of embolic stroke that can occur when AF recurs.<sup>9)</sup> The Dark Force can revive. Star Wars Saga is long-term battle, not something that can be decided in a short-term conflict. Fortunately, we have new hope available, including transcatheter occlusion device.<sup>10)</sup> We should focus on the long-term results of LAA preservation.

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