

Cost Saving Analysis With Esophageal Cooling During Left Atrial Ablation in a Large Hospital

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Introduction/Objective

Ablation of the left atrium to obtain pulmonary vein isolation (PVI) for the treatment of atrial fibrillation (AF) involves some risk to the esophagus, which is increasingly being addressed with the use of active esophageal cooling with a dedicated device (2). Recent data suggest procedural time savings with esophageal cooling when compared to LET monitoring, which may impact overall procedural costs.

Purpose

To compare the costs of active esophageal cooling to luminal esophageal temperature (LET) monitoring during left atrial ablation in a large hospital.

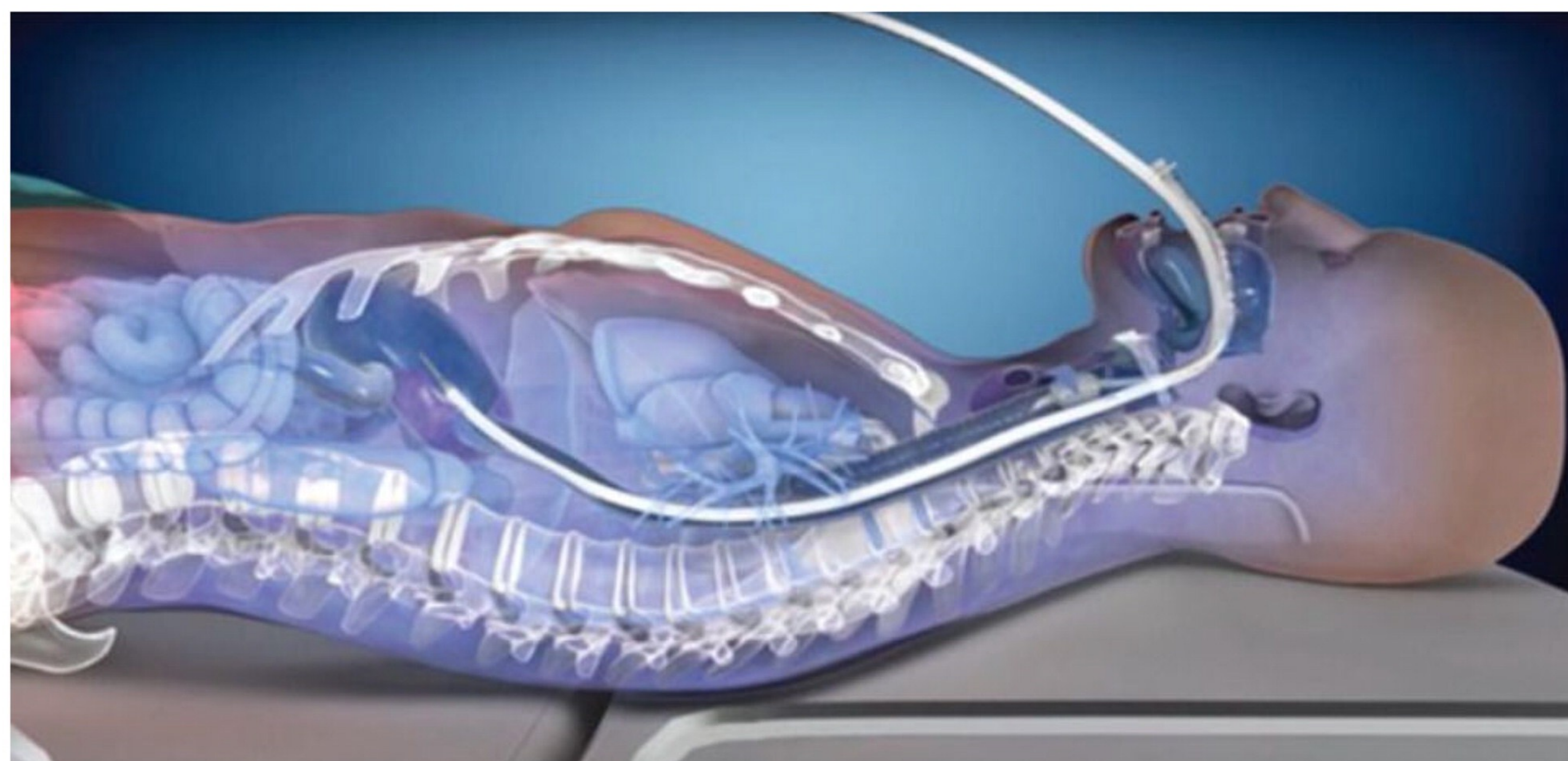


Figure 1: Active esophageal cooling device (Attune Medical, Chicago, IL)

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Methods

Using a time-driven activity-based costing (TDABC) analysis, we determined costs for PVI procedures using published data, and then used procedural timing data from a large hospital system to determine costs using two different esophageal protection technologies (1). Procedural timing data were obtained for 514 patients, with 258 patients treated with LET monitoring and 256 patients treated with active esophageal cooling. The total costs were then compared between cases using active esophageal cooling and those using LET monitoring.

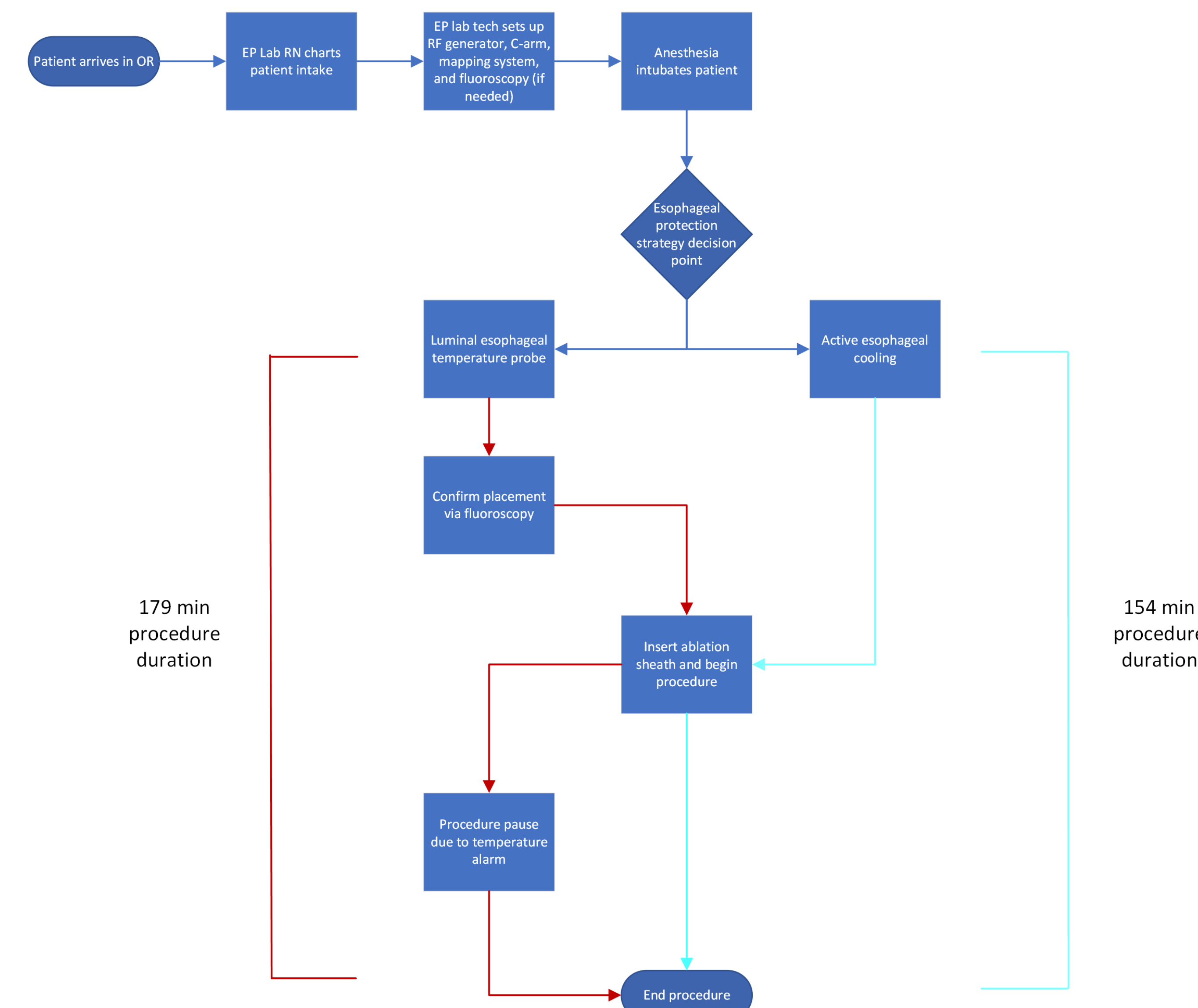


Figure 2: Process map of left atrial ablation for TDABC Analysis (3)

Results

Active esophageal cooling was associated with up to a 23% reduction in mean total procedure time (an absolute difference of 44 minutes). This time savings allowed a 13% absolute increase in lab utilization efficiency (from 80% using LET monitoring to 93% using active esophageal cooling), and a cost savings of \$109 per procedure, including device costs. Factoring in the additional case load that can be added to the lab workday with this time savings provides an additional hospital profit of up to \$1.3M per year.

Conclusions

Active esophageal cooling is associated with a reduced procedural time, which translates into a significant cost-savings when compared to traditional LET monitoring. The potential to perform additional cases in the time made available offers the possibility of a corresponding improvement in revenue and cost performance of the EP lab.

References

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