LETTERS TO THE EDITOR

To the Editor— Contact force–sensing catheters and increased risk of atrioesophageal fistula: Is the tool to blame or the workmen?

We read with great interest the article by Black-Maier et al[1] suggesting a significant increase in the risk of atrioesophageal fistula formation with the use of contact force (CF)–sensing catheters. While the authors allude to the possibility that operators using CF catheters "may ablate longer and with greater force than those using traditional catheters," we would go further by suggesting that widespread use of a force-time integral (FTI) target value of 400 gs may have contributed to this issue. This "one size fits all" value was derived from the EFFICAS I study[2] published in 2013, before Food and Drug Administration approval of CF catheters. However, it is well known that there is a significant variation in wall thickness in different regions of the left atrium. In our own study[3] of late reconnection after atrial fibrillation ablation, we demonstrated that an FTI value of 420 gs was needed to avoid late reconnection in anterior/roof segments of the pulmonary vein isolation circle, but only 230 gs was required for posterior/inferior segments. An FTI target of 400 gs on the posterior wall therefore appears markedly excessive.

We therefore suspect that this increased rate of atrioesophageal fistulas observed by Black-Maier et al may be more related to how CF catheters have been used to achieve lesion target values rather than to the CF information provided by the catheters themselves. In our opinion, CF catheters remain useful tools, but it is up to operators to learn how to use them effectively.

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Reply to the Editor— Contact force–sensing catheters and increased risk of atrioesophageal fistula: Is the tool to blame or the workmen?

We appreciate the interest and comments expressed by Das et al[1] on force-time integral (FTI) targets for catheter ablation and the risk of atrioesophageal fistula formation. We agree that the application of a single FTI target to all areas of the left atrium is suboptimal (and potentially harmful) because of the variation in wall thickness and tissue architecture. It is certainly possible that targeting an FTI of 400 gs when ablating on the thin posterior wall may contribute to an increased risk of atrioesophageal fistula. We believe that there is a tremendous gap in knowledge, with few, if any, data to guide power and contact force delivery on the posterior wall. Das et al[2] make an important contribution by identifying that an FTI of $\geq$230 gs on the posterior wall has a positive predictive value of 98.6% for no reconnection. However, validation of this threshold and other indices is needed, including those that incorporate power delivery. The use of acoustic radiation force imaging is one such way to validate these thresholds in vivo. However, analyses of large numbers of cases with specific data on ablation delivery during the procedure and postablation outcomes are needed. Centralization of ablation data from electroanatomic mapping systems linked to postprocedure outcomes via national ablation registries would help answer these important safety and efficacy questions. Ultimately, contact force–sensing catheters are an important advance in atrial fibrillation ablation. The "blame" raised by Das et al does not lie with the tools, nor with the workmen. However, the absence of durable data to guide ablation on the posterior wall is a significant impediment to optimal efficacy and safety of atrial fibrillation ablation.

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