

Abstract

Background

Use of temporary epicardial pacing wires in the post-operative period following cardiac surgery is commonplace. Timing of epicardial wire removal is dependent on surgeon preference or discretion but is carried out by intensive care unit practitioners on patients that are on dual antiplatelet therapy, novel oral anticoagulants (NOACs) and/or systemic anticoagulation.

Problem

Removal of epicardial wires in patients who are frequently on dual antiplatelet therapy, NOACs, or systemic anticoagulation can lead to catastrophic complications such as hemorrhage, cardiac tamponade, emergent sternal reentry, and death.

Methods

Retrospective data collection of adult cardiac surgery patients from 2014 to 2019 with implantation of temporary epicardial pacing wires. Analysis of patients with late procedures after wire removal and their anticoagulation/antiplatelet profiles post-operatively.

Interventions

Implementation of evidence-based epicardial pacing wire removal protocol to provide guidance for safe removal of epicardial pacing wires and a reduction in risk of potential complications post pacing wire removal.

Results

Expected results would be a reduced incidence in pericardial bleeding, tamponade, re-operation or late procedure, and death after epicardial pacing wire removal.

Conclusions/Implications

While the removal of epicardial pacing wires is standard procedure in cardiac surgery intensive care units, there is no current standardized protocol to minimize bleeding risk in a patient population where the post-operative standard of care includes the use of dual antiplatelet therapy, NOACs, and systemic anticoagulation. Implementation of a standardized protocol for epicardial wire removal would ensure that patients meet evidenced based standards prior to wire removal, thus reducing the risk of pericardial hemorrhage, tamponade, emergent reoperation, and death.