

Developing a pathway for ambulant management of endomyocardial biopsy

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Under the banner of the BCS Emerging Leaders Programme, I have initiated a QI project to change our standard approach for endomyocardial biopsy from a default using femoral venous access to jugular vein access. The goal will be to streamline the patient experience and reduce bed occupancy on the day unit, ultimately increasing capacity, allowing greater flexibility with scheduling, and making a cost saving to support other QI exercises.

OBJECTIVES

Endomyocardial biopsy (EMB) is a standard technique for rejection surveillance after cardiac transplantation and for assessment of aetiology in acute myocarditis. The operator gains access to the right ventricular cavity across the tricuspid valve, positions the biptome against the interventricular septum, and with gentle avulsion withdraws several small fragments of myocardial tissue. These are taken for histopathological analysis for presence of inflammatory infiltrate.

RATIONALE

The standard approach for EMB at our institution is biopsy via the femoral vein using a long sheath navigated to the RV septum and through which a long flexible biptome is deployed. Venous access is ultrasound guided and uses either a 7Fr or 9Fr skin sheath. There is good experience with this approach and in our hands a low risk of complication. However, this approach requires patients to be admitted to the day case ward and nursed lying flat for several hours post procedure to reduce the risk of bleeding complication. An alternative technique is the jugular approach, from the right internal jugular vein using a short 7Fr sheath and pre-shaped biptome or from the left internal jugular vein using a hybrid approach akin to the femoral technique. This approach avoids femoral access and there is no requirement for bed rest post procedure.

At Harefield we undertake between 200-250 biopsy procedures per year, of which around 80% are outpatient procedures requiring a day case admission. Capacity on the day unit places a limitation on activity and makes short notice scheduling challenging, and moreover use of a day case bed is associated with facility and staff costs. There is potential to streamline the patient journey, increase flexibility of scheduling to avoid relying on day case availability, and ultimately to save around 150 day case admissions with associated costs.

KEY STAKEHOLDERS

We are introducing the jugular and ambulant approach in a staged manner, recognizing the current practice in the team and building confidence in the alternative approach while monitoring for negative impact (see flow chart).

Key stakeholders are patients, catheter lab staff, day unit nursing teams, outpatient nursing teams, directorate managers and consultant operators. At each stage we are engaging stakeholders in decision making and review. Patient feedback is an important component of this.

IMPLEMENTATION AND PROGRESS

Firstly, we introduced the equipment and technique with catheter lab teams, while continuing to use a standard recovery protocol via the day unit. Secondly, we will move recovery to the radial lounge area and monitor for procedural complications and length of stay. Finally, we plan to move to entirely ambulant pathway with recovery in transplant outpatients.

We have introduced the jugular approach with success and catheter lab teams are learning the nuances of this approach. In most cases the procedure is shorter than equivalent femoral procedures, and there have been no major complications in jugular cases. This process has been delayed by a cessation of supply of Cordis biptomes but will continue when supply resumes. We plan to move to a seated recovery protocol when equipment supply resumes, and aim to be on a fully ambulant within 6 months.

Phase 1: Introduce

- Introduce new biptome/technique
- Build confidence in new approach

Phase 2: Build confidence

- Move bed recovery to "radial lounge"
- Audit for complications and LoS

Phase 3: Implement

- Move to fully ambulant pathway
- Recovery in outpatient clinic