

# Bridge Best Practice Protocol<sup>1</sup> Checklist

Consensus from 30 Extracting Physicians

## Best Practice Protocol Summary

### Prepare (all patients)

1. Place 0.035" super stiff guidewire from right femoral vein to right IJ.
2. Insert introducer sheath: 12F or 6F peel away
3. Prefilled syringe (48 cc saline with 12 cc contrast) & Bridge immediately available

### Practice

4. Bridge familiarity
5. Bridge competence
6. Bridge prophylaxis

### Perform

7. Immediate deployment when SVC tear is suspected, including tamponade and/or hemothorax

## Prepare: Every Patient, Every Extraction

- Place 0.035" super stiff guidewire, 260 cm length.**
  - Place from right femoral vein to right internal jugular.
    - **Alternative access:** left femoral vein and right or left subclavian vein. If femoral access is not possible, a wire and sheath can be placed from a superior venous approach.
    - Use of ultrasound to facilitate access is highly recommended.
  - Clamp the wire just outside the introducer and/or to the drape cloth to prevent movement.
- Insert introducer sheath. 12F required for Bridge delivery.**
  - Alternatively, a 6F peel away with 12F pre-loaded on the wire may be utilized.
- Pre-fill syringe with 80/20 saline & contrast mix.**
  - Pre-fill 60cc syringe with 48 cc saline and 12 cc contrast, with the two-way stopcock attached.
- Confirm Bridge Occlusion Balloon is immediately available.**
  - Review anatomical markers for potential balloon deployment.
- Team communication: roles and emergent deployment workflow.**
  - Discuss workflow with the anesthesiologist, surgeon and team.
  - Determine steps for diagnosis and treatment if a pericardial effusion is suspected.
  - Plan how fluids will be delivered. (Meds/fluids delivered superior to Bridge will not be effective.)
  - Determine when fluoroscopy will be moved to make way for opening the chest.
  - Select team member(s) for:
    - Managing the guidewire while Bridge is advanced.
    - Giving chest compressions.
    - Managing the pocket if hemostasis is required.

***"With SVC perforations, time is of the essence. Any scenarios that may delay deployment of Bridge should be avoided."***

# Practice: Prophylaxis Considerations

## Situations that may warrant staging Bridge in the IVC:

- Have several initial practice deployments been conducted?**
- Has the team practiced the workflow recently in a non-emergent setting?**
- Is this a high-risk case?**
  - Combined lead age >10 Years
  - Low BMI
  - Low LV ejection fraction
  - ICD leads
  - Multiple implanted leads ( $\geq 4$ )
  - Female patients
  - Dual Coil ICD leads
- Intra-procedure: Has the perceived risk increased and made the case high-risk?**
  - Have multiple extraction tools been used?

## Perform: Bridge Emergent Deployment

NOTE: Guidewire must stay in place during Bridge positioning and inflation

- Immediate deployment as soon as SVC tear is suspected, including cardiac tamponade, hemothorax, or both.**
  - Remove protector before loading onto the wire. No flushing or prep required.
  - Advance balloon over wire until proximal marker band on balloon is at SVC/RA junction.
  - Maintain wire control and ensure wire does not pull back.**
  - Remove extraction sheath.
  - Inflate with 30-60 cc of fluid and close stopcock on syringe to prevent deflation. **Guidewire should not be removed while Bridge is inflated.**
  - Do not position balloon too low; it may block atrial preload and increase risk of migration.
- Diagnostics**
- Pericardiocentesis (ONLY if it does not delay surgery)**
- Perform surgical repair**

NOTE: The availability of Bridge in no way obviates the need for emergent cardio thoracic surgical backup. Delay to definitive treatment is potentially life-threatening.

### Bridge Occlusion Balloon Important Safety Information

The Bridge Occlusion Balloon is indicated for use for temporary vessel occlusion of the superior vena cava in applications including perioperative occlusion and emergency control of hemorrhage. Use of the Bridge Occlusion Balloon in procedures other than those indicated is not recommended.

The adverse events associated with an occlusion balloon procedure include, but are not limited to allergic reactions, death, embolization, hematoma, hemorrhage, sepsis/infection, short-term hemodynamic deterioration, thromboembolic episodes, vascular thrombosis, vessel dissection, vessel perforation, vessel spasm.

In order to facilitate rapid delivery, it is recommended that a guidewire is in place in the superior vena cava prior to beginning the lead extraction procedure. Attempting to place the guidewire after a tear has occurred may:

- Result in an inability to traverse the superior vena cava with the guidewire
- Result in the guidewire exiting the vasculature at the tear site
- Result in an inability to place the Bridge Occlusion Balloon catheter
- Delay or prevent the ability to achieve occlusion

This information is not intended to replace a discussion with your healthcare provider on the benefits and risks of this procedure to you.

Refer to spectranetics.com for Bridge IFU.

1. Wilkoff BL, Kennergren C, Love CJ, Kutalek SP, Epstein LM, Carrillo R, Bridge to Surgery: Best Practice Protocol Derived From Early Clinical Experience with the Bridge Occlusion Balloon. Heart Rhythm (2017), doi: 10.1016/j.hrthm.2017.07.008.

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