Echocardiography Lab TEE Electrical Check:
A Step by Step Approach

The presentation will begin in a few moments….

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Echocardiography Lab TEE Electrical Check:

A Step by Step Approach

A JOINT PRESENTATION OF IAC AND ASE

Presented by:
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A Step by Step Approach

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Objectives:

Helpful understanding of the process in performing an electrical check for the TEE probes

Insight into the benefit of the electrical check

Troubleshooting tips when performing a TEE electrical check

Purpose of performing the electrical check on the TEE probes is to ensure electrical safety and prevent any harm to our patients

There have been reports of esophageal injury caused by electrical malfunction of the TEE probe

Equipment needed:

TEE Basin
Asepti-Zyme Solution or Saline
A vendor that provides all the necessary components to perform the electrical test: For example
-Probe Adapter
-Dual electrode
-TEE leakage current tester

So… Let's get started

Leakage Current Tester Control Box

Dual Electrodes

Basin & Dual Electrodes

TEE Probe Adapter

Step One:

TEE basin - be sure that it is filled to appropriate water level with a solution that will conduct electricity (Saline or Enzyme solution such as Asepti-Zyme)

Step Two:

Add Enzymatic solution to water or use Saline – this provides a form of conductivity to the water enabling you to perform leakage test

Step Three:

Attach TEE probe adapter

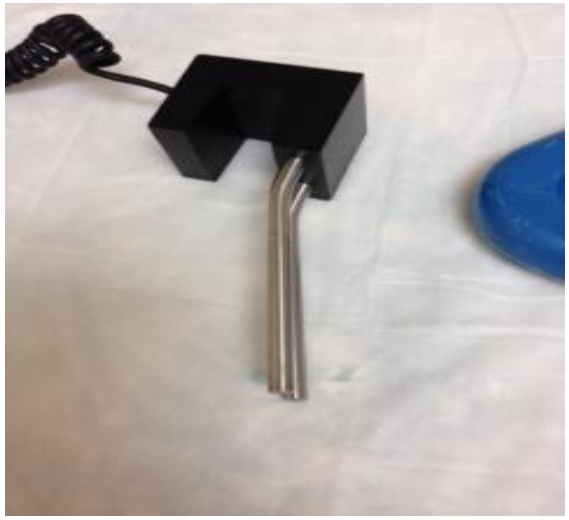
Step Four:

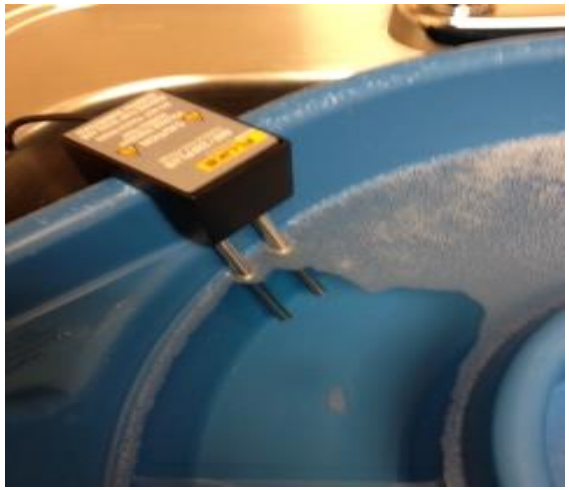
Place TEE probe in the Enzymatic bath - ensure that the entire probe is fully immersed but not the handle

Step Five:

Place the dual electrode into Enzymatic solution/saline to a depth of at least one inch

Now you can conduct your electrical check. Checks should be done after each use of the TEE probe and *__document the test results__*





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Two checks are done:

1. Check solution for Conductivity

2. Test for Transducer
   Leakage Current

Conductivity:

Move Switch to select Conductivity
-Press the on test button
Each time the on test button is turned on - all four LED indicators flash in sequence, continuing for five cycles. The READY light glows amber when the self-test routine completes with successful battery test
-Press the on test button again to check Conductivity

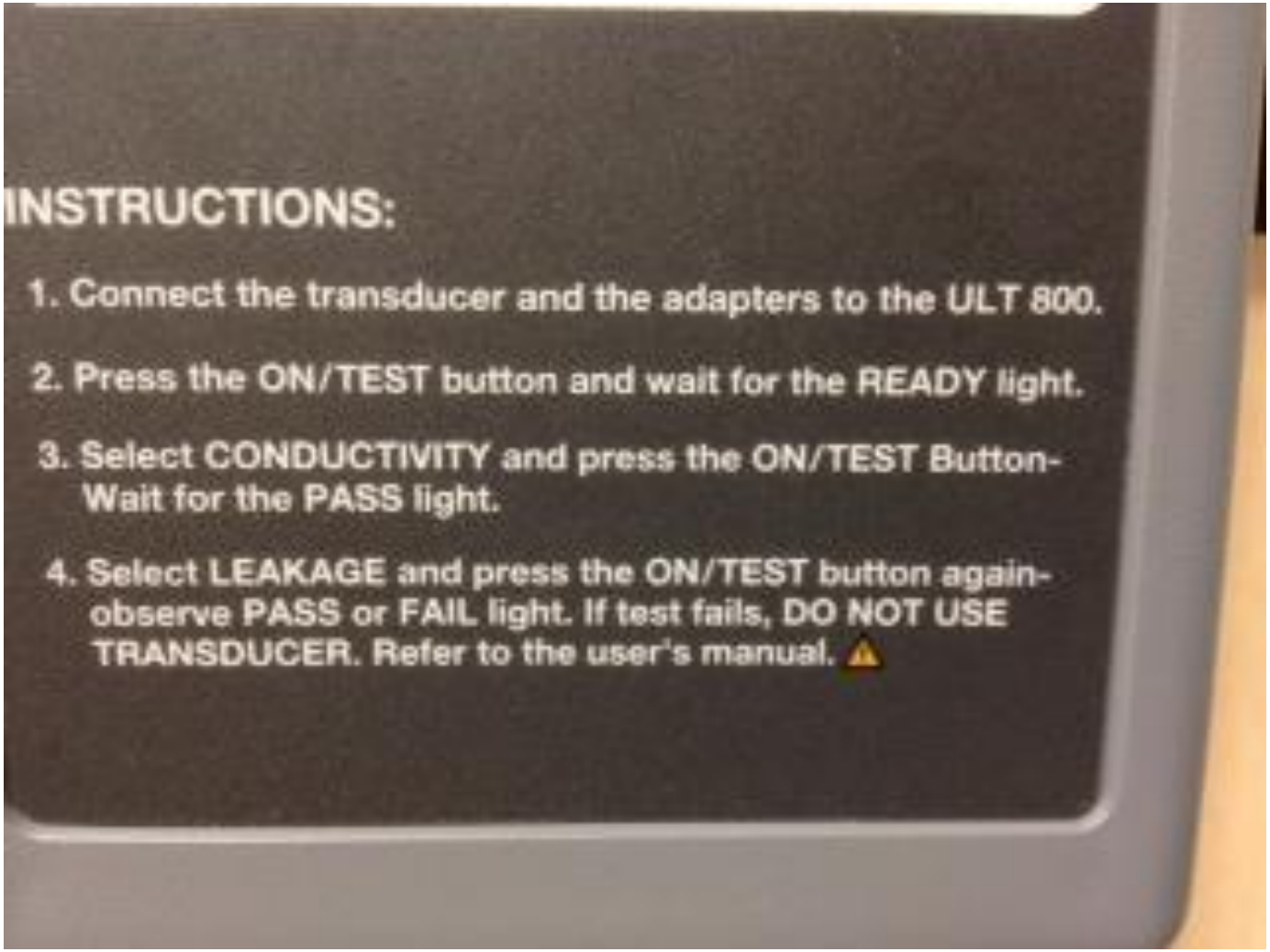
Green Light =Pass
Red Light=Fail

Transducer Leakage Current:

Perform the leakage test after the Conductivity test passes.

-Move switch to select *Leakage*
-Press the on test button to perform leakage test.

Green Light= Pass
Red Light= Fail


INSTRUCTIONS:
1. Connect the transducer and the adapters to the ULT 800.
2. Press the ON/TEST button and wait for the READY light.
3. Select CONDUCTIVITY and press the ON/TEST Button-
Wait for the PASS light.
4. Select LEAKAGE and press the ON/TEST button again-
observe PASS or FAIL light. If test fails, DO NOT USE
TRANSDUCER. Refer to the user's manual.

This is what you want to see:

GREEN=PASS

TROUBLESHOOTING TIPS

1. Conductivity fails: Check that you have immersed the electrodes to a depth of at least one inch (1 inch) and that it is firmly connected to your control box

2. After Leakage test the RED light pulses:
   - -Confirm that your adapter is plugged in
   - -Wipe the electrodes that mount on the side of the basin with a dry paper towel to remove any possible film that may have formed
   - -Replace the solution in the basin
   - -Replace the 9V battery in the tester

TROUBLESHOOTING TIPS (continued)

TEE Probe Fails leakage test

Test a different probe to confirm that your leakage current tester is working correctly - if the second probe passes, then you need to remove the probe and be certain to have it serviced

Bio-medical engineering or the vendor should be called if there is a failure

Change 9V battery whenever the LOW BATTERY light flashes red
Replace the battery at least yearly regardless of its condition

There are other manufacturers that provide similar equipment to perform the electrical check for the TEE probes - follow their guidelines in the performance of the electrical checks

However, the step by step process may be fairly similar

Remember the TEE probe should also be inspected for any signs of physical damage (bite marks, cuts, etc.) between uses

The electrical check is easy to do and incorporate into the TEE probe cleaning process and ensures that the TEE probe is safe to use

In our lab, the TEE probe is inspected and then tested/cleaned with the enzymatic solution following each procedure and the results documented

Once this process is completed the probe is then ready to be sterilized

Now it is ready to be used for the next procedure

The TEE Electrical Check will become part of the Accreditation Standards for all Echo labs - beginning December 31st, 2015

Transesophageal Transducer

2.2.3B The manufacturer's guidelines must be followed for the appropriate care and cleansing of the TEE transducer and adhere to the appropriate infectious disease standards to prevent the transmission of

Effective December 31, 2015, the structural and electrical integrity of the transducer must be checked between each use, using an ultrasound transducer leakage tester. "Passed" or "Failed" must be documented in the routine TEE probe cleaning / maintenance log along with action taken if "failed."

Question & Answer Session

Thank you for joining us today!

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