

BME 402 - Heart Phantom

Progress Report Week 12&13 – 4/10/09 to 4/24/09

Team Members:

Jessica Hause (Co-Team Leader)
Erin Main (Co-Team Leader)
Lacey Halfen (Communicator)
Peter Strohm (BSAC)
Fan Wu (BWIG)

Client:

Orhan Unal

Advisor:

Willis Tompkins

Problem Statement:

This project consists of designing a heart phantom to be used for the initial testing of a new, solenoid-tipped catheter awaiting FDA approval. This catheter will ultimately be used to treat atrial fibrillation under MRI guidance. The transparent phantom will be used to test the maneuverability of the catheter under MRI guidance as well as the high resolution imaging capabilities in the vicinity of the solenoid tip. It will consist of clear tubing of various sizes representing tortuous vasculature leading to a single heart chamber. All “veins” must terminate at one end of the phantom and be sealed so they may be filled with a saline solution in either a static or dynamic state without risk of leaking.

Goals this Week:

- Install new tubing and new snap grip clamps.
- Determine if kinking issue has been resolved by using the new reinforced tubing.
- Discuss progress with client and set up time to test under MRI.

Summary of Accomplishments:

- Installed new reinforced tubing – kinking no longer a problem
- Found clamps to be too weak for reinforced tubing
- Ordered new clamps
- Installed new clamps
- Pump tested the phantom for leaks, re-caulked and re-glued leaks
- Tested phantom under MRI

Goals next Week:

- Prepare video of MRI images
- Complete poster for presentation
- Complete final paper
- Prepare presentation

Project Difficulties:

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Project Difficulties:

- No difficulties this week.

Activities:

| Date | Person | Activity | Time Spent |
|---------|--------------------|--|------------|
| 4/10/09 | Peter & Jess | Put together reinforced tubing in phantom, found clamps to be too weak | 3 hrs |
| 4/12/09 | Peter & Erin | Ordered new clamps | 0.5 hrs |
| 4/15/09 | Fan, Lacey & Peter | Assembled new clamps, re-caulked and re-glued phantom | 2 hrs |

4/16/09 Peter Tested 3
phantom hrs
in MRI
setting
with
client