Fine Needle Aspiration, Project 23

Client: Dr. Frederick Kelcz
Team Members: Kristen Seashore (Leader)
              Tu Mai (Communicator)
              Chris Goplen (BWIG)
              Jason Tham (BSAC)

Date: 9/22/06 to 9/28/06

Problem Statement: Fine needle aspiration is a biopsy method of collecting tissue samples. The procedure is currently manual and requires repetitive low yield sampling to collect enough cells for testing. The goal of our project is to maximize tissue sample size in a single, timely procedure. We propose to develop a device that automates the current biopsy procedure using precise needle oscillation and vacuum techniques. The automation of the device will reduce operating time, cost and discomfort for the patient.

Restatement of Team Goals: Research more current/related devices and begin brainstorming ideas for project.

Individual Goals for Next Week:
Kristen Seashore: Research needle forces and brainstorm.
Tu Mai: Research alternative power sources for device.
Chris Goplen: Brainstorm design ideas and update website.
Jason Tham: Research design specifications such as size, weight, loud, testing

Summary of Accomplishments:
• The team met in class on Friday and discussed the information we found about fine needle aspiration, biopsies, and current devices. Chris and Jason researched a patent for a previous FNA automated device that seems similar to our project. We will research more about it during the week. We also decided to do much more research on FNA, biopsies, and especially current devices. We hope to understand why this project has not been done before and why there are no devices being marketed.
• Our client contacted us about observing a FNA procedure on Monday, but only Jason could attend. He was able to observe the biopsy and now understands more about the actual function of our device.
• Kristen and Chou met with Mitch on Wednesday to discuss the first draft of our PDS. We determined many different areas that should be improved. We need to add more numbers and technical aspects to the PDS information, and we will meet tomorrow morning to edit our current version.
• Each team member continued research of FNA and various aspects of our project, including biopsies, current/related devices, and needles.
Statement of Team Goals: Become experts on FNA and biopsies, research forces surrounding needle and device, and brainstorm ideas while thinking about the entire procedure and device interaction.

Project Schedule: This week we will continue research of fine needle aspiration procedures and current/related devices. We will also begin brainstorming ideas for our project.

Difficulties: No difficulties this week.

Activities:
09.22.06 Team met in class to discuss research from previous week, including FNA, current devices, and biopsies. 2 hrs
09.24.06 Chou: Researched FNA’s advantages and risks. 1 hr
09.24.06 Chou: Researched current biopsy devices. 40 min
09.24.06 Chris: Started and updated website. 1.5 hrs
09.25.06 Jason: Observed FNA procedure at Hospital. 1 hr
09.26.06 Chris: Researched FNA current devices. 30 min
09.27.06 Kristen and Chou: Met with Mitch to discuss PDS and what changes need to be made for Friday. 1 hr
09.28.06 Kristen: Developed project timeline, worked on progress report. 1.5 hrs
09.28.06 Kristen: Researched tissue forces and needle types. 1 hr
09.28.06 Jason: Researched patent claims. 1 hr
09.28.06 Chou: Researched FNA current devices and innovations. 1 hr
### Project Timeline:

#### Tasks:

- **Project Design**
  - Research
  - Brainstorming
  - Prototyping
  - Testing
  - Final Design

- **Deliverables:**
  - Progress Reports
  - Midsemester
  - PowerPoint
  - PDS
  - Final Presentation
  - Design Report

- **Meetings:**
  - Client
  - Team
  - Professor
  - Website

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#### Expenses:

No expenses this week.