



Shadowing Orthopedic Surgeons at Walter Reed



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Science, Discovery, and the Universe, Bioengineering

Overview

In the summer of 2015, I shadowed Dr. Jeffrey Giuliani and the Sports Medicine team at Walter Reed National Military Medical Center, along with other teams in the Orthopedics department, mainly the Joints team. I decided to pursue this capstone because my final goal is to do orthopedic surgery, and as such this was invaluable experience. I observed clinical rounds and surgical procedures, and assisted in minor capacities.



Shoulder arthroscopy scars, showing the extreme lack of invasiveness when compared to open surgeries. (Source: orthopaedicsurgeon.com)



A sample of a post-operative bilateral hip replacement patient. The femoral heads have been replaced with metal, and the hip socket replaced with a polymer cup. (Source: Hip Knee Clinic)



A hip arthroscopy, with the two tools inserted and the camera feed shown at the top-left. (Source: Smith & Nephew Digital Communications)

Procedures I Observed

Arthroscopies: A class of procedure where a remote tool and a camera are inserted into a joint to work, getting the work done with minimal invasiveness and recuperation time. Performed on any of the four major joints, i.e. the hip, shoulder, knee, or elbow.

- Hip: Usually performed as a basic cleanup of torn or damaged tissue within the joint.
- Shoulder: Often involves repair of tears in the labrum, a ring of cartilage surrounding the socket.
- Knee: Usually performed as a basic cleanup of torn or damaged tissue within the joint.
- Elbow: Usually performed as a basic cleanup of torn or damaged tissue within the joint.

Hip, Knee Replacements

Posterolateral Corner (PLC) Reconstructions:

Performed when one of the four major ligaments in the knee, namely the ACL, MCL, LCL, or PCL, gets torn. In the procedures I observed, the central patellar tendon was usually harvested to provide the material for the reconstruction.

Impact

Other than the minor assistance I gave, the major impact of my project was expanding my own wealth of experience and knowledge. I now know more about both the day-to-day life and the responsibilities associated with being an orthopedic surgeon.



A patellar tendon being harvested, which will then be used to reconstruct a ligament. (Source: Memorial Hermann)

Future Directions

I plan to continue with my interest in medicine, this time investigating the field of medical research. Once I have experienced that, I will have a more comprehensive view of the medical field, and I will be more prepared to make decisions about my future.

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