Rat Dissection Lab

Mahri K [redacted]

The University of Texas at Arlington

Introduction

Laminectomy is a surgery that creates space by removing the back part of a vertebra that covers the spinal canal, the lamina, in order to relieve pressure on the spinal cord. Laminectomy is normally used when medication and physical therapy have failed to relieve symptoms in patients. This procedure is also conducted in relation to the sciatic nerve which is a large nerve that comes from the distal spinal cord and extends along the length of the hind limb. Damage to the sciatic nerve results in irritation of the spinal nerves hence the need for decompression surgery. In this lab, a rat is dissected to observe the location of Bregma and Lambda on the skull, expose the vertebra, spinal cord and sciatic nerve.

Materials and methods

For the dissection of the rat lab included use of the following tools: cotton cloth, pieces of foil, Dremel, surgical blade, probes, forceps, scissors, microscope, coated braided polyester thread, and practice suture training kit.

The first lab procedure was the dissection of the rat which included exposing the brain region for the first task, exposing thoracic and lumbar regions to find the spinal cord nerve for the second task, and exposing thigh region to find the sciatic nerve for the third task. Tools like a blade, forceps and scissors were utilized to reach regions mentioned above. Cotton cloth was utilized to wipe excess blood and the piece of foil was used as the surface to cut the rat on. Dremel was used to cut into the skull.

The second lab procedure included stitching the rat's wounds. The cuts on the rats were made to expose sciatic nerve in the thigh and the rat was stitched using the tools such as coated braided polyester thread for suturing, forceps, and microscope.

Results and Conclusion

After creating a skin incision and removing soft tissue from the skull we were able to successfully observe the location of Bregma and Lambda on the skull and drill a hole through the skull (between these two points) without penetrating or harming the brain.

In the next step after making a longitudinal incision on the back part of the mouse we were able to expose the vertebra and successfully remove one of these vertebrae to expose the spinal cord a process which can be used to insert implants on the spinal cord.

We were also able to expose the sciatic nerve of the mouse near the hip bone region, cut the sciatic nerve and using a conduit, suture the two ends together again. As we know a severed sciatic nerve can stop signal transmission and in the case of its occurrence must be repaired rapidly and in the case of a live mouse performing this procedure could restore limb movement after healing.