

**ART OF PREPARATION OF MOUNTED SKELETON OF LABORATORY ANIMAL-
SPRAGUE DAWLEY RAT (*RATTUS NORVEGICUS*)**

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ABSTRACT

Sprague dawley rat was died and brought to the laboratory. Macerated bones were procured. Design of skeleton was prepared and all the bones and joints were assembled as per the design. Vertical rod, horizontal rod and platform were prepared. The mounted skeleton was prepared to understand the topographic position of bony features, splanchnic organs, site of intra-cardiac puncture, dorsal veins and site of surgical techniques.

KEY WORDS : Laboratory animals , Mounted skeleton , Sprague Dawley rat

INTRODUCTION

Under-graduate teaching in medical and veterinary profession is being improving day to day by adopting new technologies. Laboratory animals are used in basic biological research, disease diagnosis, immunology, virology, applied medicine and demonstration. To confirm safety, potency and vitality of vaccines, drugs, infusions, fluids, immune sera , bio assay etc is of great help. These aspects are standardized in laboratory animals, prior to their distribution in the field. They can be very well used for carrying out various biological experiments and research on biomedical as well as veterinary and animal sciences. Mounted skeleton gives idea about topographic position of bony features, splanchnic organs, site of intra-cardiac puncture, dorsal veins, lateral vein, site of jugular vein puncture and site of surgical techniques. In view of these and art of preparation of skeleton of Sprague dawley rat have been developed and presented in this article.

MATERIALS AND METHODS

Sprague dawley rat was died and after postmortem examination removed the skin. The carcass was one foot deeped under ground for maceration. Entire bones were collected after one month for preparation of skeleton. All bones were washed in bleaching water and after in door drying chemical treatment of "Termiseal" to protect from insects was carried out.

RESULTS

A) **ARCHITECTURAL DESIGN** – (Fig. 1): Plan of architectural design was prepared as under -

- 1) Horizontal rod- 13 cm long galvanized wire of 1 mm thick was used for vertebral column. Normal curvature of vertebral column was given to wire in which corresponding vertebrae were fixed by adhesive material.
- 2) Vertical rod- These were used for support, one from the base of cranium and the other from os coxae to the surface of platform. These rods were 4 cm and 7 cm long with 3 mm thick.
- 3) Platform- Hard board of 27cm×9cm×1cm size was used for preparation of platform. Acrylic sheet of same size was fitted on the top surface by adhesive and 4 bushes were fitted at bottom corners by screw.

B) **Articulation of bones**, joints and ribs-

Bones of forelimb and hind limb were articulated with adhesive material as per design by giving appropriate angle and normal gesture of body of rat. After identification of all vertebrae corresponding to region were articulated in the horizontal rod.


C) **PREPARATION OF SKELETON-**

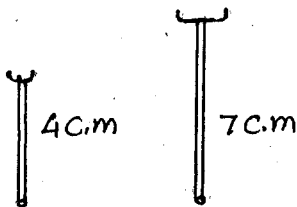
Firstly, small and large vertical rods were fixed in the central line at appropriate distance from front side. At the top of rods, half circle pieces of G.I. wire were fixed by adhesive on which articulated vertebra column was rest. Entire column was fixed by adhesive. Ribs were identified and attached dorsally to bodies of

vertebrae from 7th cervical to 12th thoracic vertebra. Ventrally, the ends of ribs were attached to sternum by adhesive material. Cranially, the mandible and the occipital condyle of skull were attached to first cervical vertebra and horizontal rod. Caudally, all coccygeal vertebrae were attached serially from last sacral vertebra by giving normal shape of tail. Assembled forelimb was attached dorsolaterally on bony thoracic cage at the level of 1st to 6th ribs. Hind limb along with os coxae was attached laterally to the lumbar and sacral vertebra on either sides of vertical rod. Prepared skeleton was painted with ivory white color and a coat of touch wood and covered by case of acrylic sheet for protection (Fig. 2, 3 and 4).

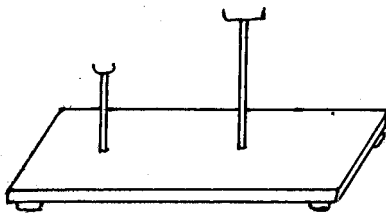
CONCLUSION

This skeleton is very useful to study function, response, site of organs or whole body system and demonstration in medical and veterinary colleges where various courses on laboratory animals are being taught as per MCI and VCI curriculum.

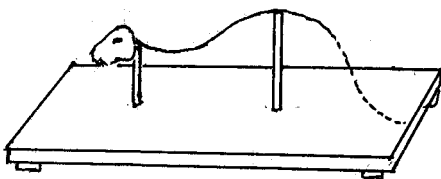
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1. Horizontal rod 1 mm x 13 cm



2. Vertical rod 3 mm thick



3. Platform with Acrylic sheet
27 cm x 9 cm x 1 cm



4. Ideal model of platform,
horizontal and vertical rods



Fig. 2



Fig. 3



Fig. 4

Fig. 1 Architectural Design of skeleton of Sprague Dawley Rat