

ROOM-TEMPERATURE RESIN CASTING TECHNIQUE A LOW COST EFFECTIVE TEACHING TOOL IN HUMAN ANATOMY

EAST Edirisinghe[#], DEH Kotalawala, HDG De Fonseka and SG Yasewardene

*Department of Anatomy, Faculty of Medical Sciences,
University of Sri Jayewardenepura, Nugegoda, Sri Lanka*

[#]surangiy@hotmail.com

Traditionally gross anatomy is taught in medical schools with cadaver dissections. Due to the cost involved in maintenance the medical faculties are considering novel teaching/learning tools in Anatomy. As a solution the Department of Anatomy, Faculty of Medical Sciences (FMS), University of Sri Jayewardenepura(USJP) has invented a method of mounting considerably anhydrous human tissues in a solid resin casts to study detailed anatomy. To develop a durable low cost technique to preserve human tissues in a manner that details the anatomy while retaining relevant properties. The tissues, are initially fixed using formalin to stop the decaying and decomposition of soft tissues. The water content was significantly removed using 99.9% acetone series while maintaining the original tissue architecture. Dehydrated tissue parts were exposed to sub-atmospheric pressure in a resin bath to replace acetone by resin. Final specimens were embedded in clear resin after mixing with the catalyst, which will polymerized into a solid resin cast. The human specimens were taken from the cadavers that have been donated to the Department of Anatomy, FMS, USJP with written consent obtained prior to death to use the cadaver for medical teaching and research. This is an appropriate method for preserving human body cross-sections at specific vertebral levels. In this invention, dehydrated human tissues were embedded in a clear synthetic resin cast, while preserving the original shape and volume. These casts have zero exposure to formalin during handling. The specimens are more durable than other routine specimen preservation methods used in Sri Lanka. Finally the tissue waste is low and thereby the preservation and maintenance cost of cadavers were reduced drastically. Currently these resin casts are used for teaching/learning anatomy at FMS, USJP. Undoubtedly the detailed anatomy is best learned by cadaver dissections. Resin casted specimens are a cost effective and successful supplementary method of teaching/learning gross and cross sectional Anatomy with no exposure to formalin.

Keywords: Resin-Casting, Anatomy, Teaching