

27. REACTION OF ABDOMINAL CONNECTIVE TISSUE IN RATS TO DENTAL BASE MATERIALS. *Thomas D. Schaad, *William J. Carter and Hugh I. Myers, University of Kansas City School of Dentistry, Kansas City, Mo. Red copper cement, zinc oxide (95%) plus zinc acetate (5%) with eugenol, tri-basic calcium phosphate with saline and calcium hydroxide with saline were inserted into the abdominal connective tissue of twelve rats. The tissue was examined histologically after 24, 48 and 96 hours. Red copper cement gave the greatest reaction, being more severe after 96 hours than after 24 hours. Zinc oxide and zinc acetate showed a moderate reaction while dicalcium phosphate and calcium hydroxide showed slight reactions. This is similar to the results obtained in a study using rat incisors. It is suggested that there is a similarity between the reaction of abdominal connective tissue in rats and the calciotraumatic line evidenced in rat incisors. Confirmatory evidence is under investigation with an additional series of animals using the same materials. The use of abdominal connective tissue in rats is offered as a means of mass screening of dental base and restorative materials.

✓28. EFFECTS OF AMMONIACAL SILVER NITRATE ON VITAL HUMAN PULP TISSUE. *Harold R. Englander and Verda E. James, Dental Research Facility, U. S. Naval Training Center, Great Lakes, Ill. and University of Illinois College of Dentistry, Chicago, Ill. Ammoniacal silver nitrate was applied to the carious dentin of 5 teeth and to caries exposed pulps of 10 teeth in 17 to 25 year old males for 5 minutes and neutralized with eugenol for 5 minutes. Teeth were then sealed with zinc oxide and eugenol cement and extracted 9 to 32 days later. Histologic examination showed that the carious dentin was consistently stained brown by the silver nitrate while black particles of reduced silver were precipitated within the tubules of the deeper, vital portion of the dentin. The black particles of reduced silver within the vital dentinal tubules tended to accumulate at the boundary between primary and secondary dentin and at the pulpo-dentinal junction and resembled the black precipitate formed on the surface of the dentin by the eugenol. The brown staining of the carious dentin matrix was quite different from the black precipitation of free silver and suggested a chemical combination of silver with protein. Contrary to previous reports, this study revealed disruption of the odontoblasts with increasing degrees of inflammation and edema of the pulp as the free silver particles within the dentinal tubules approached the pulp. Black silver particles were often found within the pulp. When applied over pulp exposures, free silver was precipitated on the surface of the blood clot. The subjacent layer of the pulp was hemorrhagic, reticulated and surrounded by a broad band of inflammation in 8 out of the 10 exposures treated with silver nitrate. In all cases treated, the area below the zone of inflammation was normal, indicating a strong tendency by the connective tissue to localize the injury caused by the silver nitrate.

29. RESPONSE OF AMPUTATED PULPS TO CALCIUM SALTS AND ANTIBIOTICS. Verda E. James and *Harold R. Englander, University of Illinois College of Dentistry, Chicago, Ill. and Dental Research Facility, U. S. Naval Training Center, Great Lakes, Ill. In 133 teeth with carious vital exposures and condemned for extraction, pulpotomies were performed following the technique outlined by Englander, Massler and Carter. The amputated pulp and blood clot were covered by one of four calcium compounds or one of four antibiotics in specimens as follows: calcium hydroxide 22, calcium phosphate 33, calcium carbonate 8, calcium hydroxide in a methyl cellulose base 13, penicillin 11, terramycin 25, aureomycin 7, a polyantibiotic (PBSC) 6, and combinations of antibiotics and calcium salts 8. Twenty-seven were kept as controls without operations, and 5 as controls with sham operation. All were covered with a fast setting zinc oxide and eugenol cement, the teeth extracted 4 to 181 days later and