

Age Changes In The Tunica Intima Of The Aorta In Goat (capra Hircus)

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Abstract:

Age changes in the aortic tunica intima may explain the higher prevalence of atherosclerosis among the elderly. Goat is a suitable model for the study of cardiovascular disease but the age changes in its aortic tunica intima are unreported. This study therefore examined structural changes that occur in the tunica intima of its aorta. Six healthy goats three aged over 60 months, and three aged less than 12 months, were used in this study. The animals were euthanized with sodium pentobarbitone and specimens taken from the various segment of the aorta studied by light microscopy and transmission electron microscopy. Materials for light microscopy were fixed 10% formaldehyde solution, processed for paraffin embedding and 7 micron sections stained with Mason's Trichrome and Weigert's Resorcin Fuchsin/Van Gieson stains. Those for transmission electron microscopy were fixed in 3% phosphate buffered glutaraldehyde solution, post fixed in osmium tetroxide and prepared for durcupan embedding. Ultrathin sections were stained with uranyl acetate, counterstained with lead citrate and examined by EM 201 phillips© electron microscope. Observations reveal that aging is characterized by endothelial discontinuities, presence of lymphocytes and dendritic cells in the tunica intima, subendothelial thickening, vacuolation and disintegration of internal elastic lamina. It is concluded that the intimal breaches observed in intimal aging may promote ingress of macromolecules into the vessel wall, and underpin the higher prevalence of atherosclerosis among the elderly. Control of serum atherogenic molecules should be enhanced in this age group.