



OPTICAL AND HISTOLOGICAL EVALUATION OF HUMAN TENDON TISSUE STERILIZED BY IONIZING RADIATION

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SUMMARY

Sterilization by irradiation is a technique that is used by tissue banks aiming to eliminate contamination of human allografts, being a safe method, free of residue and used as final sterilization. After the tissue procurement, these undergo a series of processing stages and then are packaged and preserved by freezing. Despite aseptic care of the material those may be subjected to sterilization in the final packing by ionizing radiation, raising the security level of sterility of the tissue. The aim of this study was to evaluate the effects of application of ionizing radiation, produced by ⁶⁰Co source in human tendons preprocessed (A-alcohol + antibiotic; B- H₂O₂ + ultrasound) obtained through collaboration with tissue banks and preserved by freezing in -80° C, the radiation absorbed doses in processing were 12.5, 15 and 25 kGy, each one with their corresponding non-irradiated control, to examine possible structural or morphological alterations. The irradiated samples and their controls were analyzed by means of optical coherence tomography (OCT) and optical coherence tomography polarization sensitive (PS-OCT), and histological tests had been stained with hematoxylin-eosin (HE). According to the results the tissue processed with alcohol/antibiotic in conjunction with irradiation proved to be the most effective.