13. DEMINERALIZATION OF BONE GRAFTS

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Introduction. Bone grafting is a surgical procedure that is used to treat post-traumatic, rarely post-necrotic defects. Most often these bone transplants are collected from people who die no more than 6 hours ago, the femoral heads that are collected after surgery or autografts.

Aim of study. Determine the optimal environment (acid concentration and current voltage) for effective bone graft dimerization.

Methods and materials. The bovine bone is degreased with detergent and then depiriostat. With the help of the electric window, the bone is cut into segments in the form of discs, monitoring the temperature. Take 3 control segments and 3 experiment segments. First we perform the radiography, after the control segments we place them in a vessel with physiological solution, and the others in a glass vessel containing HCl acid. A carbon electrode is placed in the vessel. For 24 hours these segments are in acid of a certain concentration and voltage. The acid is changed every day and the x-ray is taken. When these segments are completely demineralized we record the result. The experiment continues but already with a different voltage and dose of acid. All results are documented.

Results. Complete demineralization of the graft at an acid concentration of 0.1 mmol / l and a voltage of 1.5 volts takes place in 10 days. At the concentration of 0.1mmol / l acid and the current voltage of 3-5 volts, the generalization is reached in 8 days. With the acid concentration of 0.1 mmol / l and the voltage of the electric current 6-9, the generalization is performed in 6 days. And in the case of the concentration of 0.1 mmol / l and the voltage of the current 12-20 volts, the result is erroneous due to the increase of the acid temperature above the norm. At the concentration of 0.5 mmol / l acid and the current voltage of 3-6 volts, the decrease takes place in 4 days. The rest of the clues are still being worked on.

Conclusion. From the previous results obtained, the most optimal acid concentration is that of 0.5 mmol / l and the current voltage of 3-6 volts for a demineralization in a shorter time.