

論文名 : A proposed protocol for the standardized preparation of PRF membranes for clinical use (要約)

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Upon clinical application, thick platelet-rich fibrin (PRF) is usually compressed to fit the implantation site. However, it is speculated that the preservation of platelets and plasma content depends on the compression methods used. To accurately evaluate the clinical outcome of PRF, the preparation protocol should be standardized. Freshly prepared PRF clots were compressed into a thin membrane by our novel PRF compression device. The localization of platelets was examined by SEM and immunostaining. Growth factor levels were evaluated by bioassays and cytokine-antibody array techniques. The angiogenic activity was examined by the chick chorioallantoic membrane assay and the scratch assay using HUVEC cultures. Platelets were concentrated on the surface of the region adjacent to the red thrombus and this region was subjected to the experiments. Compared to the PRF membrane compressed by dry gauze (G-PRF), the preservation of the plasma content, 3D-fibrin meshwork, and platelets was more intact in the compressor-prepared PRF membrane (C-PRF). Among the growth factors tested, C-PRF contained PDGF isoforms at higher levels, and significantly stimulated cell proliferation and neovascularization. C-PRF may be useful for grafting while minimizing the loss of bioactive factors. This C-PRF preparation protocol is proposed as a standardized protocol for PRF membrane preparation