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Plasma Derived Products for Polypropylene Mesh Integration in Abdominal Wall Defects: Procedure Description and Partial Results

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Abstract
Introduction: Abdominal wall surgery for parietal defects is done by implanting a type of mesh in the surrounding tissue above or beneath the fascia layer of the abdominal wall. The most common type of mesh used is polypropylene which sometimes takes a lot of time to be covered by the fibrous tissue1,2. In an attempt to accelerate the cellular binding on the mesh and so to increase the recovery rate, we developed a protocol with plasma derived products to accelerate the mesh integration. Platelet rich fibrin (PRF) and platelet rich plasma (PRP) were evaluated in promoting the collagen synthesis and cell proliferation on the mesh surface.
Material and methods: We evaluated 32 patients with different types of abdominal wall defects which required polypropylene mesh implants in open surgery with the mesh implanted above the aponeurosis layer. We divided the patients into 3 groups: standard procedure, mesh augmented with PRF only, mesh augmented with PRP only.
Results: Even though the number of patients involved in the study has a very small impact for a statistical analysis, the pattern observed in our prospective study reveals from the beginning that augmenting the standard procedure with plasma derived products improve the outcome (mesh integration) up to 65% faster integration.
Conclusion: The technique that we used to augment the standard implant is cost-effective and simple to use in the surgical theatre.
Key words: PRP, PRF, plasma derived product, mesh integration, polypropylene mesh integration, abdominal wall repair augmentation