

The effective use of platelet-rich plasma (PRP) in treating a severe traumatic knee injury in a child with hemophilia A

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Dear Editor,

Platelet-rich plasma (PRP), is a regenerative therapy used in various medical fields to stimulate healing, and promote tissue regeneration¹. Although the efficacy of PRP has been described in several reports, its use in hemophilic patients is still limited and controversial^{1,2}. Some papers report the use of PRP for traumatic injuries or chronic wound repair^{3,4}, none in hemophilia.

An interesting and effective use of PRP in an 8-year-old child with hemophilia A (FVIII 6-7%) is reported below.

At the end of April 2025, the child injured his right knee with a blade. Due to imperfect management of antihemorrhagic therapy caused by parental refusal, the child underwent several surgical revisions of the wound and multiple hospitalizations. The day after the last checkup, when the wound appeared clean and healing, sudden and significant bleeding forced the child to undergo a new surgery. The surgeons decided to use absorbable hemostatic gauze (Tabotamp), to promote healing, while the antihemorrhagic treatment with FVIII concentrate was restarted. Two days after surgery, the child began experiencing throbbing knee pain and intermittent fever spikes throughout the day. An ultrasound examination revealed diffuse soft-tissue edema in the infrapatellar area overlying the Tabotamp insertion site, which was probably infected. Subsequent microbiological analysis of the purulent exudate present in the wound showed the presence of *Staphylococcus aureus*, that caused necrosis of the skin and subcutaneous tissue over the wound, requiring surgical removal. Antibiotic therapy was started, and when the wound was found to be sterile, in agreement with the pediatric surgeons, we decided to use PRP gel to promote tissue regeneration.

Our department prepared the PRP gel using blood obtained from volunteer donors and supplemented with cryoprecipitate, calcium gluconate, and vitamin C. Vitamin C was added to promote collagen synthesis and stabilization and to help maintain the gelatinous consistency of the product. After gelation, the material was shaped to match the wound size and placed within the lesion. The PRP gel was secured with a polyurethane dressing and elastic compression. Three additional PRP applications were performed to achieve complete wound repair, on days 4, 7, and 11 after the initial treatment. Tissue regeneration began immediately and was completed after two weeks, **Figure 1**. Therapy with FVIII concentrate was stopped after first PRP application, no further therapies or surgeries were required, and the child was finally discharged.

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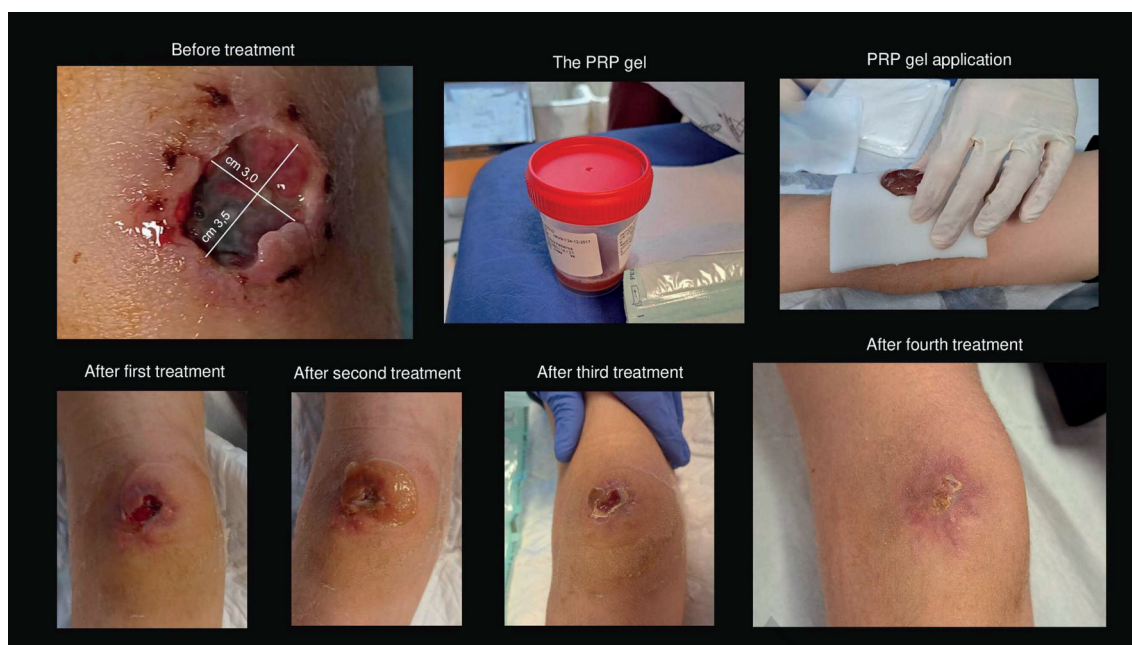


Figure 1 - Tissue regeneration after four consecutive applications of PRP gel

Managing a deep wound in a hemophilic patient is always complex. Zhou *et al.*⁵ reported the case of a 35-year-old man with hemophilia who had a chronic, non-traumatic post-surgical wound that became infected, requiring tissue removal. The wound was effectively treated with PRP, but unlike our case, treatment lasted for a much longer period.

Taking the right approach from the beginning is essential to avoid lengthy hospitalizations and surgeries. In our case, this was mainly due to the parents' initial refusal to accept their child's clotting disorder and treat it accordingly. Once tissue damage has occurred due to delays in treatment and infectious complications, PRP therapy has proven to be effective for regenerating lost tissue and repairing the wound.

However, large-scale studies supporting its use in treating traumatic injuries, especially in patients with coagulation disorders, are still lacking.

Authorship contributions

All the Authors meet the International Committee of Medical Journal Editors criteria for authorship for this manuscript, take responsibility for the integrity of the work, and have given final approval of the version to

be published and SP conceived and wrote the paper; all Authors revised and approved the manuscript.

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The Authors declares no conflicts of interest.

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