Hair Restoration with Plasma Rich in Growth Factors with a Side of Neuropathic Pain Relief, Roman SJ[1], Broyer Z[2]

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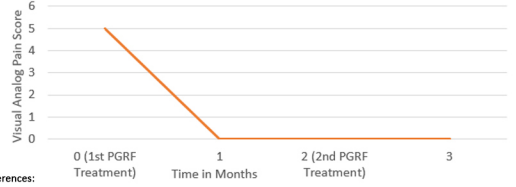
Introduction: Decreased pain and increased activity level was achieved in a patient with chronic painful post-traumatic tibial neuropathy with the use of plasma rich in growth factors.

Case Report: A 47 year old male patient was seen in follow-up for an administration of plasma rich in growth factors PRGF) for androgenic alopecia. During this visit he inquired as to whether treatment with PRGF could help his chronic pain in the right leg and foot. He had been at an extremely high level of fitness and activity until the age of 39 at which time he suffered a spiral fracture of the tibia and fibula during a hockey game. He underwent surgery with rod insertion and required a bone stimulator for fusion. Eight years later, he had chronic intermittent sharp pain in the shin rated on the visual analog scale (VAS) at 3/10 while walking and 6/10 with more strenuous activity. He was unable to run, jump, or participate in sports. He also reported discomfort and partial numbness in the plantar aspect of the foot as well as the toes. On physical exam, motor exam was 5/5 throughout the lower extremities, sensation was moderately decreased to light touch in the distribution of the tibial nerve in the right lower leg and foot. There was no allodynia or hyperesthesia.

After informed consent, the patient decided to proceed with treatment using PRGF (Endoret® (PRGF®), BTI Vitoria-Gasteiz, Spain) treatment to the right leg at the same visit as his hair treatment. 36 cc of peripheral blood was withdrawn and was put into 9 mL tubes containing 3.8% sodium citrate. Afterward, the blood was centrifuged (BTI System IV, Vitoria, Spain) at 580 g for 8 minutes, and the plasma column was fractioned into Fraction 1 (F1) and Fraction 2 (F2). F2 is defined as the 2 cc of platelet-rich plasma just above the leukocyte buffy coat, and F1 is defined as the remaining plasma volume above F2. This process yielded approximately 6 cc of the F1 fraction with approximately a 1-1.5 fold increase in platelets and 6 cc of the the F2 fraction with approximately a 2-3 fold increase in platelets. To increase the volume of injectate, we combined 6cc of the F2 fraction with 3 cc of the F1 fraction for a total of 9 cc of product which was activated with calcium chloride prior to injection. 7.5 cc was injected into the scalp using 30 gauge needles. The BA Konica Minolta Sonimage® HS-1 ultrasound unit with a 4-18-MHz high-frequency linear transducer was used to scan the right tibial nerve (Konica Minolta Wayne, NJ, USA). 1.5 cc was injected perineurally about the tibial nerve under live ultrasound guidance using a 25 gauge 1.5" needle proximal to the ankle. 2 cc of F1 fraction was also injected into the belly of the tibialis anterior muscle. Two months later, at his follow-up hair visit, VAS score was 0/10 (Figure 1) with activity and he reported that he started to practice tennis without pain although he felt that his strength and his speed was limited. He did note continued numbness and tingling of the plantar aspect of the foot as well as the toes. At that visit we injected 7.5 cc of the same product into the scalp and 1.5 cc perineurally about the tibial nerve under live ultrasound guidance using a 25 gauge 3.5"needle, this time in the mid-calf which was the location of his previous fractures. At his three month follow-up, after having had two PRGF treatments to the right leg, he described the area of numbness as decreased. He was now able to exercise without pain. He increased his activity level to include tennis, short distance running, squats and box jumps. He also reported a feeling of more strength and stability.

PRGF has demonstrated in-vivo improvement in traumatic nerve injury[1,2]. PRGF has also shown promising clinical results in the treatment of traumatic nerve injury[3] and alopecia[4]. PRP has also been utilized in the treatment of chronic peripheral neuropathic pain[5].



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