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Platelet Rich Plasma and Stromal Vascular Fraction (PRS) for the treatment of CMC1 osteoarthritis

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Abstract

Up to today, surgical treatment has been the only option enabling significant long-term improvement of mobility and reduction of pain for patients suffering from CMC1 osteoarthritis. At this moment only a few less invasive therapies are available in an effort to postpone joint replacement with its long recovery process and serious risk for postoperative sequelae. Therapies of this sort, focusing on regeneration of the affected joint, are theoretically preferred. However, these therapies prove to be very expensive or have insufficient scientific proof of effect.

In this article we describe the use of autologous PRS (Platelet Rich Stroma) in two patients for the treatment of their CMC osteoarthritis using the ACA kit from Arthrex. With this device, PRS can be developed and injected (both intra-articularly as well as peri-articularly) in a procedure under local anesthetics in less than 45 minutes. In this procedure, lipo-aspirate is harvested and centrifuged to isolate dehydrated adipose tissue. This is subsequently mechanically fractionated and centrifuged a second time to obtain an autologous Stromal Vascular Fraction (SVF). Platelet Rich Plasma (PRP) is fabricated through centrifugation of a 15cc venous blood sample using the Arthrex double syringe system. By combining 4cc of PRP with 1cc of SVF, the Platelet Rich Stroma is created. For both patients the mobility (AROM; Kapandji); strength (key-pinch and grip strength); pain (VAS scores) and patients' satisfaction (DASH-questionnaire) were evaluated preoperatively and postoperatively after 1 month, 3 months and 6 months. At 3 months postoperatively the pain and disability scores had decreased for respectively 62,5% and 90%; 47% and 8%. Additionally, the scores in key-pinch and grip strength had improved for respectively 40% and 120%; 15% and 16%.

To conclude, PRS seems a new promising treatment for the treatment of CMC1 osteoarthritis. Though 6 month postoperative results have to be awaited for.

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