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Case Report

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Treatment of Squamous Hyperplasia of the Vulva with Autologous Platelet-Rich Plasma in Postmenopausal Women - Own Experience

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Introduction

Treatment of the vulvar epithelium with autologous platelet-rich plasma (a-PRP, plasmotherapy) is a revolutionary, alternative method in medicine that is based on observations of the role of platelets in the process of repair of injured body parts. The effect of natural growth factors in introducing platelets into the affected area is essential.The development of modern medicine has led to the development and implementation of autologous platelet-rich plasma therapy in the field of assisted reproductive technologies (ART). The main problems addressed by the method are: atrophy of the epithelium of the external genital organs in postmenopausal women due to hormonal imbalance. The use of autologous plasma containing activated platelets allows the local application of platelet-derived growth factors. The aim is to restore women's quality of life and ensure a comfortable life after menopause.

The administration of platelet autologous plasma enables the modulation, enhancement and targeted stimulation of tissue regeneration. The therapeutic effect is due to the action of growth factors found in platelets, which stimulate the regeneration (repair) of mucosal tissues. Autologous platelet-rich plasma (a-PRP) is made individually for each patient. A minimal amount of own peripheral venous blood is required. After processing, a blood product called autologous platelet-rich plasma is obtained. It stimulates the processes of proliferation and regeneration through a large amount of growth factors and cytokines: Vascular endothelial growth factor (VEGF), epidermal growth factor (EGF), platelet-derived growth factor (PDGF), transforming growth factor (TGF), fibroblast growth factor (FGF), connective tissue growth factor (CTGF), insulin-like growth factor I and II (IFG-I, II), interleukin-8 (IL-8), other cytokines that stimulate proliferation and growth.

The method is used worldwide in various fields of modern medicine: dentistry, dermatology, aesthetic medicine, trichology, gynecology, orthopedics, traumatology and surgery. It can be used as a monotherapy or in combination with other treatment methodologies without contraindications in their use.

Autologous platelet-rich plasma is obtained by centrifugation 10 ml of autologous venous blood in a tube with 2.5 ml of Acid Citrate A Anticoagulant solution (ACD-A) is required. Centrifuge on a set program to separate the erythrocytes.

The vulvar plasmotherapy has strict indications. The procedure is prescribed after a thorough examination, laboratory tests and consultation by an obstetrician gynecologist and dermatologist. The following effects are observed in the skin area after the procedure: reduction of inflammation; calming of pruritus due to normalisation of neuroimmune connections; stimulation of own epidermal and mesenchymal stem cells as well as connective tissue cells; stimulation of angiogenesis and improvement of skin trophicity; balanced stimulation of epidermal cell proliferation and differentiation processes; optimization of dermal remodeling aimed at elimination of cicatricial changes.

Before the procedure is started, a complete blood count of the patient is necessary to establish reference values. Microbiological examination of vaginal fluid should also be done to rule out inflammation. It is mandatory to take a biopsy from the affected area to rule out malignancy with certainty.

Patients unaffected by conservative treatment are indicated for this procedure. The method demonstrates good results in cases with a history of simple vulvectomies in the past due to histologically proven precancerous lesions of the vulva.

Absolute contraindications to the procedure are febrile state, decompensated chronic diseases, viral hepatitis, inflammatory skin diseases, systemic blood diseases, immunodeficiency insults, psychiatric disorders and neoplasms of any nature.

The procedure is carried out using local anaesthesia (lidocaine and prilocaine cream), as the area in which it is applied is delicate and sensitive and in order to ensure patient comfort. It is a completely safe procedure and there are no established side effects. It is recommended to do several treatments every 20-30 days. The exact number is strictly individual and depends on the duration of symptoms, histological diagnosis and patient motivation. It is a good idea to perform at least 3-4 PRP-therapies in the same area. They are performed until the symptoms have ceased. Thereafter, maintenance treatments are done every three to six months. The duration of maintenance therapy also varies.

The term squamous hyperplasia (SH) is applied to lesions that do not have pathognomonic features of atypia, significant inflammation, or other disease. SH is also denoted as hyperplastic dystrophy.

It affects patients between the ages of 30 and 60. Two-thirds of women are premenopausal and postmenopausal. Local pruritus is characteristic. The distribution is asymmetric and multifocal forms are possible. The macroscopic appearance is highly variable, but the lesions are usually discrete, and the skin may appear thickened gray-white or reddened, excoriated.

Histologically, SH presents by compact hyperkeratosis with possible parakeratosis, hypergranulosis, acanthosis, and mild fibrosis of the papillary dermis. The thickened and elongated epidermal papillae may fuse. Mitotic figures can be seen in the lower layers of the epidermis. SH is p53 negative. About 40-45% of patients with vulvar dystrophies have SH, more than 40% have lichen sclerosis (LS), and 10-15% have mixed forms.

Squamous cell hyperplasia most commonly affects the clitoris, labia majora, and perianal skin. Colposcopically, the picture in SH is identical to that of Lichen simplex chronicus. SH is not associated with cellular atypia and is not a premalignant condition. The affected skin is hyperemic and edematous, dry, thickened, slightly desquamating and with prominent edges. Colposcopically, it presents diffuse circumscribed, keratinized areas without vascular changes (leucoplakia). Lesions may be livid in color with excoriations and fissures, resulting in pruritus.

Conservative treatment consists of elimination of potential sensitizers and irritants, emollients and topical corticosteroids [1].

Case Report

We present a clinical case of a 57-year-old woman who visited the office for external genital discomfort unaffected by conservative treatment. For 7 days prior to the examination, the patient had topically applied a corticosteroid prescribed by a dermatologist.

The history revealed the following information: the patient had no family history. She reports two children born via partus normalis in 1990 and 1996. The woman has been menopausal for 9 years. She denies any concomitant diseases. According to the patient, a simple vulvectomy was performed 4 years ago for histologically proven squamous hyperplasia. External genital organs were post-simple vulvectomy state, with well circumscribed hyperemic areas, located laterally around the vaginal entrance. Against this background, prominating leucoplakic areas with spread to the perineum are noted. Tne vagina was hypotrophic. (Figure 1).

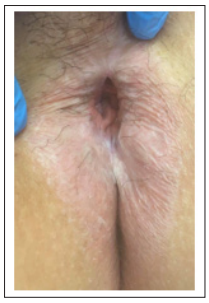

Figure 1: Macroscopic view of the lesion before plasmotherapy. External genital organs were post-simple vulvectomy state, with well circumscribed hyperemic areas, located laterally around the vaginal entrance. Against this background, prominating leucoplakic areas with spread to the perineum are noted.

The patient was consulted with a dermatologist to rule out skin disease. The patient's complete blood count was within reference limits. Microbiological examination of vaginal fluid showed normal vaginal flora for the age.

A biopsy was taken from the specimen located in the vulvar area around the vaginal entrance to rule out a malignant component. The histological result was as follows: „Epidermis with hyperkeratosis, parakeratosis and acanthosis - squamous hyperplasia" (Figure 2).

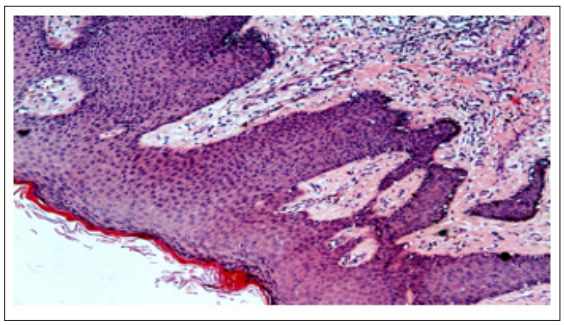

Figure 2: Squamous Hyperplasia - Mild Hyperkeratosis, Acanthosis, Thickened And Elongated Epidermal Papillae That Merge In Places.

After the informed consent was discussed and signed by the patient, the first PRP-therapy of the vulva was performed on 21.03.2024 at University hospital "Saint Marina" – Pleven, Bulgaria, with local anesthesia with lidocaine (Figure 3).

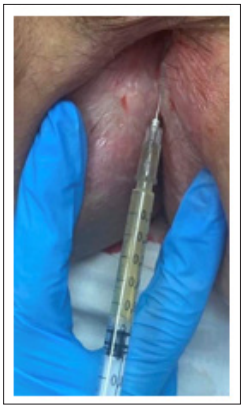

Figure 3: Performance of PRP - Therapy of the External Genitalia.

Autologous platelet-rich plasma is obtained as follows: 10 ml of autologous venous blood is drawn. The thickness of the needle should be at least 1.1 mm in diameter. The blood is placed in a special tube with a separating gel and with 2.5 ml of Acid Citrate A Anticoagulant solution. The tubes are moved to a centrifuge set at 3200 rpm for 5 minutes. The supernatant, a layer overlying the separating gel, is withdrawn with a syringe. Before manipulation, the skin is cleansed with Iodasept solutio 10% and treated topically with a cream containing Lidocaine and Prilocaine. Intradermal plasma injection: plasma is injected into the affected areas of the vulvar and perineal skin using 31-32 G calibre needles, 6-13 mm long. The injection technique is predominantly papular and micropapular, injections are performed from the centre to the periphery in all problem areas, the distance between injection points is 8-10 mm. The needle is inserted at a 45º angle to a depth of 4-6 mm. Post-injection treatment of the skin: cleansing with Iodasept solutio 10%, followed by application of tcream, which has anti-inflammatory, anti-exudative and reparative effects.

In this particular patient, a total of four plasma treatments were performed over 20 days. The very next day after the first treatment, the woman reported relief of discomfort (figure 4).

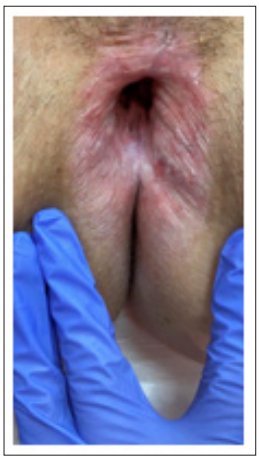

Figure 4: Appearance of the Lesion after the First PRP-Therapy

At the follow-up examination performed one week after the fourth procedure, we found no symptoms. The patient reported that she felt well and that the dryness, pruritus and discomfort in the external genital area had disappeared (Figure 5).

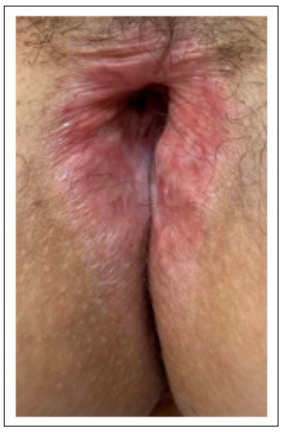

Figure 5: Appearance of the Lesion after the Fourth PRP-Therapy

The maintenance therapy schedule was discussed. We performed maintenance plasma treatments every third month for one year. The woman is now feeling well and leading a normal and full life. She reports no symptoms in the external genital area. She continues to visit the office only for check-ups every three months. At each examination, the effect of the procedure is assessed. The intensity of pigmentation, absence of scabs, improved skin elasticity, moisturization, and turgor were noted. The patient reported a reduction in the incidence of pruritus, dyspareunia and dysuric complaints. A significant increase in quality of life was reported. No recurrence of the condition has been observed to date.

Discussion

The pathological changes that occur in the skin of the external genitalia in perimenopausal women are mainly represented by dystrophic lesions - squamous hyperplasia, lichen sclerosus, and a number of other skin diseases. The colposcopic image represents keratosis. On the skin in the area of the vulva, various types of dermatoses can be observed, which are also localized in other anatomical areas. They have a different clinical picture and are important to consider when making a differential diagnosis [2, 3].

Recent publications describing the effect of plasmotherapy on external genitalia in premenopausal and postmenopausal women demonstrate results similar to ours. Casanova and collaborators reported an increase in the quality of life and described the regenerative effect of intradermal plasmotherapy [4-6].

The Diakomanolis team presented a study in 2022 that compared the effect after treatment with clobetasol and with autologous PRP-therapy of dystrophic changes of the external genitalia in postmenopausal women. The authors found that regenerative changes in the dermis and improvement in skin turgor was statistically significantly higher in the group of patients who underwent plasmotherapy. A correspondingly significant improvement in quality of life was observed in this group. Moreover, plasmotherapy is administered according to a regimen and is more convenient for the patient compared to daily application of a cream [7].

Dhillon et al. cautioned that injection of autologous platelet-rich plasma is not without statin effects. However, these are solely provoked by the mechanism of administration. The authors describe cases of local infection and formation of cicatrices and calcifications. In 2019, Latalski's team described a case of allergic reaction after plasmotherapy. Subsequently, controversy has been held regarding the safety of the method. In contrast, no adverse reactions were observed in our case. Saleh and Abdelghani published a study in 2022 that proved that the administration of a-PRP in postmenopausal women with dystrophic vulvar lesions had a good effect. The authors reported similar results to ours: a significant reduction in symptoms such as discomfort, pruritus, pain, and dryness. Their patients reported improvement in their quality of life and sexual intercourse [8-10].

Conclusions

The case we described shows that a-PRP therapy shows good results in premenopausal patients. The method promotes tissue regeneration, contributes to symptom reduction and is a good alternative option for patients not responding to conservative therapy. Plasmotherapy is a modern, safe, effective, non-surgical and non-hormonal treatment and can be administered to a wide group of patients.

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