A successful collagenase and hyaluronic acid topical use combined with antibiotic therapy in the treatment of ulcerative lesions arising on tattoo

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Letter to the Editor

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Dear Sir,

we present an unusual complication arose on a tattoo and the innovative use of collagenase to treat it. Tattooing is an ancient art and is still widely practiced all over the world. After the procedure, a wound healing process starts with an instantaneously acute inflammatory phase, followed by a proliferative and maturation phase to restore tissue integrity **1**. Skin complications include infections, hypersensitivity reactions to pigments, chronic dermatoses and the development of benign or malignant tumors on site of tattoo **2**.

A 25-year-old man, two weeks after making a colorful tattoo on his right arm, showed the development of four ulcerative lesions on it. They were about 0.5-1.0 cm in diameter, oval in shape, with regular margins and net limits; there was an aura surrounding erythematosus; the bottom of the lesion was covered by purulent discharge and abundant fibrin. (**Fig.1**) Furthermore, the patient referred locoregional pain, itching and heat. A swab of wound secretions was performed and it resulted positive for Staphylococcus aureus and Streptococcus pyogenes. So we have given the patient oral antibiotic therapy based on clavulanic acid 875 mg and amoxicillin 125 mg (2 tablets / day for 6 days). We also performed daily medication of ulcerative lesions disinfecting them with Amuchina Med 0.05% and cutaneous solution based on 10% povidone-iodine and applying a film of about 2 ml of Bionect Start® ointment on the lesions and zinc oxide paste onto the surrounding skin. Bionect Start® is a topical cream containing hyaluronic acid, bacterial fermented sodium hyalunorate (0.2 % w/w) salt and bacterial collagenase obtained from non-pathogenic Vibrio alginolyticus (>2.0 nkat1/g) **3**. The use of collagenase increases the effect of macrophage collagenase, which is responsible for wound debridement by splitting and breaking down proteins

that hold the eschar (dead and devitalised material) over the wound **3**. Bionect start® is shown to provide an optimal moist environment and a wound preparation to facilitate the natural healing process **4**. This drug also contains hyaluronic acid (HA) which above all generates a microenvironment stimulating the secretion of growth factors, proliferation and migration of fibroblasts, endothelial cells, keratinocytes and angiogenesis and it has a positive effect on inflammatory response **4**, **5**. Moreover HA is also capable of regulating the water balance acting on osmotic pressure and flow resistance and selectively sieving the diffusion of plasma and matrix proteins **5**. So, after 7 days of conservative treatment with the use of Bionect Start® we obtained resolution of symptoms and complete re-epithelialization of the lesions. (**Fig.2**)

The microbiological test result allowed us to give the patient a specific antibiotic therapy to treat the infection on the tattoo. Probably the wound healing was also possible with the simple cleansing, disinfection and antibiotic therapy without the use of collagenase, but in that case the scar would be disfiguring with unsatisfactory aesthetic results. So the use of this collagenase has allowed us to achieve good scars, and it has mainly allowed to keep the colors of the tattoo, requiring no editing it after healing. (**Fig.2**)

Key Words: collagenase, hyaluronic acid, ulcerative lesions, tattoo

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Legend of figures

Fig.1: Ulcerative lesions of the right arm.

Fig.2: Complete re-epithelialization of the lesions of the right arm after 7 days.

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Figures



Fig.1: Ulcerative lesions of the right arm.



Fig.2: Complete re-epithelialization of the lesions of the right arm.