

In vivo effects of a novel degradable filler

Tiziana Punzi *, **Massimo Gulisano ***, **Nazareno Cammarota ****,
Carmelo Protopapa °, **Domenico Caporale °°**,
Marco Ruggiero # and **Stefania Pacini ***

* Dept. of Anatomy, Histology and Forensic Medicine, University of Firenze, Italy; ** Dept. of Dermatological Sciences, University of Firenze, Italy; ° Dept. of Plastic, Reconstructive and Aesthetic Surgery, University of Parma, Italy; °° Dept. of Surgical Sciences, Inst. of Thoracic Surgery, University of Parma, Italy; # Dept. of Experimental Pathology and Oncology, University of Firenze, Italy.

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SUMMARY

Novel types of permanent and transient fillers are proposed both in plastic and reconstructive surgery and in dermatology. Different molecules with high biocompatibility, no side effects, and slow degradation rate in human tissues are emerging. The importance of degradable fillers significantly increased in recent years for a variety of reasons: surgical injection of these materials is easier and with less side effects; treatment could be performed in a short time; patient's reported pain is scant; treatment-related expenses and cost for the patient are relatively low.

In this study we investigated the biological effects of a new degradable filler, *i.e.* of a polymer made of 8% high grade (99%) polyvinyl alcohol, and of 92% sterile water in rat skin, after its injection in the dermis. The polymer examined exhibited optimal biocompatibility and full degradability in normal rat skin within 120 days. No pathological changes could be observed in the areas where injection of polymer had taken place.

INTRODUCTION

Synthesis and biological characterization of permanent and transient degradable polymers are expanding fields in plastic and reconstructive surgery and in dermatology (Bergeret-Galley et al., 2001; Rogalla, 1997). New molecules with interesting physical and chemical features are continuously synthesized and their biological effects are tested in cellular and animal models (Klein et al., 2000; Alster et al., 2000; Pacini et al., 2003).

Recently, a novel family of degradable fillers was proposed for plastic and reconstructive surgery. The degradable filler that we chose to investigate is a polymer