



Adipose Stem Cell Injection for Non-Healing Ulcers

Kumaraswamy M¹, Venkatesh M S²

¹Assistant Professor, ²Head of Department, Department of plastic surgery, M.S.Ramaiah medical college, MSRIT post, New BEL road, Bangalore, Karnataka, India.

Corresponding Author Dr. Kumaraswamy

Email: doctorkums@rediffmail.com

Abstract

Non-healing ulcers are a major problem in the sense of number as well as treating the same. Though we have number of methods to treat the same, each has its own disadvantages. We have a series of adipose cell injection for non-healing ulcers. Adipose cells are easy to harvest, abundantly available, and they have stem cell all of which have shown to have an advantage on others methods available. We have 11 cases, 8 neuropathic ulcers, 2 varicose ulcers, 1 post traumatic ulcers of area between 4.5 sqcm to 34sqcm. We aspirated adipose cells randomly either from the abdomen or the thigh, concentrated by centrifugation. We used only the adipose layer of the three layers and injected the same to the wound. The median time for the wound to heal was 36 days ranging between 28 days to 54 days. Adipose cell injection has great potential in non-healing wounds.

Key words

Non healing wound, adipose cell injection.

Introduction

Non healing ulcers have been difficult to treat due to various reasons. There are many therapeutic measures to improve the healing like, Negative pressure wound therapy, platelet derived growth factor, ultrasound, hyperbaric oxygen therapy, etc. We present a case series of fat injection for wound healing. All the methods have been proved to be effective with their own advantages and disadvantages. Sometimes, none off the methods appear effective, including more aggressive use of surgery including SSG, flaps. Some of our patients do not accept the choice of skin grafts/ Flaps. There has been increasing research using stem cells for wound healing. The stem cells can be obtained from cord blood, bone marrow, skin, adipose tissues, etc. The adipose tissue has been used in healing of wounds, fistulas, scar improvement, all of the articles suggest that, these adipose cells have stem cells and their ability to proliferate and differentiate may be the cause¹. Stem cells have the ability to self-renew and differentiate into other cell types and are classified into adult stem and progenitor cells, embryonic stem cells and induced pluripotent stem cells. The mechanisms