

# Assessment of Superoxidized Solution Efficacy in Treating Pressure Ulcers: A Case Study of a 65-Year-Old Male with Refractory Parkinson's Disease

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## Abstract

In the realm of pressure sore management, meticulous wound care is essential, serving not only to prevent infections but also as preparatory groundwork for potential surgical interventions. This study delves into the effectiveness of Superoxidized Solution in directly addressing pressure sores. Through a detailed case study of a 65-year-old male afflicted with refractory Parkinson's disease and presenting pressure sores in the greater trochanteric region, our findings indicate that the application of Superoxidized Solution fosters tissue regeneration while concurrently mitigating the risk of infection.

**Keywords:** superoxidized solution, pressure sores, wound management

## Introduction

Various substances, including Povidone Iodine, EUSOL, Acetic acid, hydrogen peroxide, silver sulfadiazine, and local antibiotic ointments, have traditionally been employed in the treatment of pressure sores [1]. These treatments serve multiple purposes such as infection prevention, bacterial reduction, and stimulation of tissue regeneration to facilitate wound healing.

Super Oxidized Solution represents a novel approach to wound management. This solution, characterized by its low pressure, contains constituents like Hypochlorous acid, Sodium hypochlorite, Chlorine dioxide, Ozone, Hydrogen peroxide, and Sodium chloride. It is produced through the electrolysis of pure water and salt. During this process, Super Oxidized Solution releases oxygen and chlorine, which can disrupt the outer layer of single-celled organisms, impairing their functionality. However, larger organisms are less susceptible to these pressure-related effects [2].

## Materials and Methods

In this investigation, a 65-year-old man was admitted and managed under the care of the Department of Plastic Surgery at JIPMER, Puducherry, India. He presented as a known case of refractory Parkinson's disease, resulting in prolonged bedridden status and subsequent development of pressure sores (Figure 1). Extensive clinical evaluation was conducted, including various hematological and biochemical assessments, to ascertain anesthesia suitability and exclude underlying systemic illnesses. Furthermore, wound swabs were subjected to culture analysis to identify microbial pathogens and their antibiotic susceptibility patterns. The pressure sores were subjected to daily irrigation with Super Oxidized Solution (Fig 2) and dressed with gauze soaked in the same solution. Notably, the wounds responded positively to this treatment modality, displaying signs of healthy granulation tissue formation following local application of Super Oxidized Solution. Due to the patient's overall health status and multiple comorbidities, surgical intervention or anesthesia

administration was deemed inappropriate. Nevertheless, the exclusive use of Super Oxidized Solution for local wound care led to noticeable improvements in wound condition (Figure 3). The study meticulously

documented parameters including bacterial growth status, time taken for wound sterilization, appearance of granulation tissue, duration of healing, and any accompanying complications.



**Figure 1:** showing condition of pressure sores over greater trochanteric region at time of presentation



**Figure 2:** showing application of super oxidized solution over the pressure sores



**Figure 3:** showing improvement in condition of pressure sores seven days after application of super oxidized solution

## Results

The utilization of superoxidized solution was noted to expedite the wound healing process, offering substantiation that employing this solution is advantageous for facilitating the recuperation of pressure sores.

## Discussion

The prevalence of pressure sores is notable, often resulting from prolonged periods of immobility. Addressing pressure sores and their associated complications necessitates a comprehensive approach. Historically, clinicians have utilized various local treatments and substances to manage these wounds<sup>3</sup>. One innovative approach to wound management involves the use of Super Oxidized Solution. This solution has been extensively researched globally as a disinfectant for medical instruments and has been employed for diverse purposes in human healthcare, including ulcer treatment, cavity cleansing, and hand sanitization [4,5]. It has received approval from regulatory agencies in Europe and the United States for medical use, with favorable outcomes reported across various wound types [6]. Our study specifically investigated the application of Super Oxidized Solution for cleaning and sterilizing pressure sores. Following a seven-day treatment regimen, we observed sterilization of the wounds and witnessed healthy tissue regeneration subsequent to Super Oxidized Solution application. Consistent with previous research findings, we encountered no significant complications associated with the use of Super Oxidized Solution. It facilitated the removal of necrotic tissue, reduction of pathogenic microorganisms, promotion of tissue regeneration, and acceleration of the healing process without causing harm to surrounding healthy tissue. For patients with superficial wounds or those deemed unsuitable for surgical intervention, utilizing Super Oxidized Solution alone may suffice as an effective treatment strategy. Its hydrating properties and minimal toxicity [7-11], render it a promising option for managing pressure sores. However, further well-controlled studies are imperative to fully elucidate its antimicrobial, anti-inflammatory, and wound-healing capabilities.

## Conclusion

Superoxidized solution demonstrates its efficacy in fostering wound healing across various scenarios, including acute and chronic cases, regardless of their etiology. Its effectiveness spans from treating pressure sores to applications in cosmetic surgery. Our case report substantiates

that superoxidized solution plays a significant role in promoting improved wound healing outcomes across a wide range of wound types.

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