IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

INTEGRATIVE MANAGEMENT OF A CHRONIC PRESSURE ULCER WITH HYPOTHYROIDISM: A CASE REPORT

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ABSTRACT

Background: Pressure ulcers are localized injuries to the skin and underlying tissues caused by prolonged pressure, shear, or friction, most commonly over bony prominences. Healing is frequently delayed in patients with hypothyroidism because of impaired collagen synthesis, angiogenesis, fibroblast proliferation, and reduced cellular metabolism. Integrative therapeutic approaches have been increasingly explored as adjuncts to conventional wound care to enhance tissue repair and improve clinical outcomes.**Objective:** To evaluate the effectiveness of a multimodal integrative treatment approach in the management of a chronic Stage III pressure ulcer in a patient with hypothyroidism.**Methods:** A prospective single-patient case report was conducted in a 60-year-old woman with hypothyroidism and a chronic Stage III pressure ulcer over the left gluteal region. The patient underwent a 35-day integrative treatment protocol comprising acupuncture, vacuum-assisted therapy, infrared radiation therapy, spinal manipulation, therapeutic massage, fomentation, foot reflexology, and topical herbal formulations. Wound dimensions (length, width, and depth) were measured serially, and wound volume was calculated. Secondary outcomes included pain assessed using the Visual Analog Scale (VAS), granulation tissue formation, reduction in slough and exudate, wound contraction, epithelialization, and improvement in periwound inflammation.**Results:** The baseline wound measured 8.5 × 7.0 × 10.0 cm (595 cm^3). After 7 days, wound volume decreased to 482 cm^3, representing an 18.99% reduction, with reduced necrotic tissue, decreased exudate, and healthy granulation tissue formation. By the fifth to sixth week, wound dimensions had reduced to 4.0 × 3.5 × 5.0 cm (70 cm^3), corresponding to an approximately 90% reduction in wound volume. Progressive wound contraction, epithelialization, resolution of inflammation, and substantial pain reduction from severe to mild were observed throughout treatment.**Conclusion:** This case demonstrates that a multimodal integrative treatment approach may effectively complement conventional wound care by promoting wound healing, reducing pain, and improving tissue regeneration

in chronic pressure ulcers. Larger controlled clinical studies are warranted to confirm these findings and determine the contribution of individual treatment modalities.

KEYWORDS: Pressure ulcer, Pain, Injury, Wound healing,decubitus ulcer, Necrotic pressure ulcer, Tissue- repair

INTRODUCTION

Pressure ulcers, also referred to as bedsores or decubitus ulcers, are localized injuries to the skin and underlying soft tissues caused by prolonged pressure, shear forces, or friction, most commonly occurring over bony prominences such as the sacrum, ischial tuberosities, heels, and hips (Coleman et al., 2013). The sacral and gluteal regions are particularly susceptible because of sustained pressure in immobilized or bedridden patients. Pressure ulcers represent a major healthcare burden due to their high prevalence, prolonged healing time, increased healthcare costs, and associated complications, particularly among elderly individuals and patients with neurological disorders, limited mobility, or chronic illnesses (Jaul, 2010; Nussbaum et al., 2018). Comorbid conditions including diabetes mellitus, anemia, malnutrition, peripheral vascular disease, and hypothyroidism further impair tissue integrity and delay wound healing. Hypothyroidism adversely affects the healing process by reducing metabolic activity, collagen synthesis, angiogenesis, fibroblast proliferation, and epithelialization, thereby increasing the risk of chronic non-healing wounds (Guo & DiPietro, 2010). Clinically, pressure ulcers are classified into four stages according to the extent of tissue damage, with advanced-stage ulcers carrying a high risk of infection, osteomyelitis, sepsis, and mortality (Brem & Lyder, 2004). Conventional management includes pressure redistribution, wound debridement, infection control, nutritional optimization, and appropriate wound dressings. However, chronic wounds frequently require adjunctive interventions. Integrative therapeutic approaches, including acupuncture, physical therapies, and herbal medicine, have shown promising potential in improving tissue perfusion, reducing inflammation, relieving pain, and promoting wound healing (Frykberg & Banks, 2015). This case report presents the successful management of a chronic sacral pressure ulcer in a patient with hypothyroidism using a multimodal integrative treatment approach.

PATHOPHYSIOLOGY

The pathophysiology of pressure ulcers involves a complex interaction between prolonged mechanical loading, tissue ischemia, inflammation, and systemic factors that ultimately result in tissue breakdown. Pressure ulcers develop when sustained external pressure exceeds capillary closing pressure (approximately 32 mmHg), particularly over bony prominences such as the sacrum, ischial tuberosities, heels, and hips. Continuous compression occludes the microvasculature, reducing blood flow and limiting the delivery of oxygen and nutrients while preventing the removal of metabolic waste products. This results in gradual tissue damage, decreased metabolism, and cellular hypoxia. If pressure is not relieved, ischemic damage progresses to irreversible cell death and ulcer formation (Guo & DiPietro, 2010; Stekelenburg & Oomens, 2007).Mechanical deformation of tissues also plays a crucial role in pressure ulcer development. Shear forces distort soft tissues and blood vessels, impairing microcirculation, whereas friction damages the superficial epidermis, increasing susceptibility to skin breakdown. These forces are particularly common in bedridden patients who slide in bed or remain in prolonged fixed positions. In addition, prolonged compression obstructs lymphatic drainage, resulting in interstitial edema that further compromises tissue perfusion and nutrient exchange (Gefen, 2008).

Following the release of pressure, reperfusion of ischemic tissues may paradoxically worsen injury through the generation of reactive oxygen species and inflammatory mediators. This ischemia reperfusion injury increases oxidative stress, endothelial damage, and vascular permeability, thereby amplifying tissue destruction. Persistent ischemia also activates inflammatory pathways involving cytokines and proteolytic enzymes, resulting in extracellular matrix degradation, delayed granulation tissue formation, and progressive necrosis that may extend into muscles and bone in advanced-stage ulcers (Peirce et al., 2000; Guo & DiPietro, 2010). Both pressure ulcer development and wound healing are strongly influenced by systemic factors.Conditions such as diabetes mellitus, anemia, malnutrition, peripheral vascular disease, hypothyroidism, advanced age, and immobility reduce tissue tolerance and impair the normal phases of wound repair. Hypothyroidism delays healing by reducing cellular metabolism,

collagen synthesis, angiogenesis, fibroblast proliferation, and epithelialization, thereby increasing the likelihood of chronic non-healing wounds (Frykberg & Banks, 2015). Consequently, successful management requires not only local wound care but also correction of underlying systemic conditions and implementation of multidisciplinary treatment strategies to promote tissue regeneration and prevent recurrence.

METHODOLOGY

Study Design: This study was designed as a single-patient prospective case report evaluating the effectiveness of an integrative management approach in the treatment of a chronic Stage III pressure ulcer associated with hypothyroidism.over a treatment period of 35 days, with follow-up extending to the 5th–6th week.

Study Participant: A 60-year-old female diagnosed with hypothyroidism and presenting with a chronic Stage III pressure ulcer over the left gluteal region was included in the study. The ulcer had been present for approximately one month and had failed to heal adequately with previous routine care.

The patient included in this case report was an adult (≥18 years) with a clinically diagnosed Stage III pressure ulcer and a known history of hypothyroidism who was willing to undergo the prescribed integrative treatment and provided written informed consent. Patients with uncontrolled diabetes mellitus, osteomyelitis or exposed bone requiring surgical intervention, malignancy involving the wound, severe peripheral arterial disease, or immunocompromised conditions or systemic sepsis requiring intensive medical management were excluded.

Baseline Assessment

Baseline assessment included:

- Wound location and stage.
- Wound dimensions (length, width, and depth) were measured using a sterile measuring scale.
- Wound volume calculated using the formula:
- Wound Volume = Length × Width × Depth (cm^3)

Additional clinical observations included:

- Presence of slough and necrotic tissue.
- Wound exudate.
- Periwound skin condition.
- Granulation tissue formation.

Outcome Measures

Primary Outcome: Reduction in wound size (length, width, depth, and wound volume).
Secondary Outcomes: Reduction in pain assessed using the Visual Analog Scale (VAS).
Development of healthy granulation tissue. Reduction in necrotic tissue and wound exudate.
Wound contraction and epithelialization. Improvement in surrounding tissue inflammation.

Follow-up Assessment

Wound assessment was performed at:

- Baseline
- Day 7
- Weekly thereafter
- Final evaluation during the 5th–6th week.

Serial clinical photographs and wound measurements were recorded to document healing progression.

Data Analysis: As this was a single-case study, descriptive analysis was performed. Wound healing was evaluated by calculating the percentage reduction in wound volume using the formula:

$$\text{Percentage Reduction} = \frac{\text{Baseline Volume - Final Volume}}{\text{Baseline Volume}} \times 100$$

Pain scores were presented descriptively using serial VAS measurements. Clinical observations regarding granulation tissue, epithelialization, wound contraction, exudate, and slough reduction were documented throughout the treatment period.

INTERVENTION

Intervention Protocol

The patient received a comprehensive integrative treatment protocol consisting of naturopathy, yoga, acupuncture, manipulative therapy, and herbal medicine for 35 consecutive days.

Acupuncture

Acupoints:

- GB20, LI4, LI11, and SP6.
- Four needles per session.
- Frequency: Twice daily.

Physical Therapies: Vacuum therapy for wound drainage and stimulation of granulation tissue. Infrared radiation therapy applied from a distance of approximately 70 cm. Spinal manipulation once every two days. Therapeutic massage. Fomentation and foot reflexology according to the treatment schedule.

Herbal Treatment

Oil/Cream Formulation Applied twice daily, containing:

- Pontederia vaginalis (25 ml)
- Wrightia tinctoria (1 g)
- Aristolochia bracteata (0.25 g)
- Curcuma aromatica (0.25 g)
- Embelia ribes (1 g)
- Nigella sativa (0.25 g)
- Psoralea corylifolia (0.25 g)
- Azadirachta indica (5 ml)
- Jaralebogenes burzii

Paste Formulation

Applied locally:

- Azadirachta indica (15 g)
- Berberis aristata (10 g)
- Glycyrrhiza glabra (10 g)

TREATMENT

Table 1

DAYS	6:30 AM	10 AM	10:45 AM	4PM	5PM
1	Sukshma Vyayama	Spinal Manipulation along with Massage	Herbal paste application	Acupuncture therapy	Herbal paste application
2	Sukshma Vyayama	Massage with IRR	Herbal paste application	Acupuncture therapy	Vaccum therapy and Herbal paste application
3	Sukshma Vyayama	Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application
4	Sukshma Vyayama	Spinal Manipulation along with Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Herbal paste application
5	Sukshma Vyayama	Massage therapy	Herbal paste application	Acupuncture therapy	Vaccum therapy and Herbal paste application
6	Sukshma Vyayama	Massage and IRR	Herbal paste application	Acupuncture therapy	Herbal paste application
7	Sukshma Vyayama	Spinal Manipulation along with Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application
8	Sukshma Vyayama	Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Vaccum therapy and Herbal paste application
9	Sukshma Vyayama	Massage therapy	Herbal paste application	Acupuncture therapy	Herbal paste application
10	Sukshma Vyayama	Spinal Manipulation along with Massage and IRR	Herbal paste application	Acupuncture therapy	Herbal paste application
11	Sukshma Vyayama	Massage and Fomentation	Herbal paste application	Acupuncture therapy	Vaccum therapy and herbal paste application
12	Sukshma Vyayama	Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Herbal paste application

13	Sukshma Vyayama	Spinal Manipulation along with Massage	Herbal paste application	Acupuncture therapy	Herbal paste application
14	Sukshma Vyayama	Massage and IRR	Herbal paste application	Acupuncture therapy	Vaccum therapy and Herbal paste application
15	Sukshma Vyayama	Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application
16	Sukshma Vyayama	Spinal Manipulation along with Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Herbal paste application
17	Sukshma Vyayama	Massage therapy	Herbal paste application	Acupuncture therapy	Herbal paste application
18	Sukshma Vyayama	Massage and IRR	Herbal paste application	Acupuncture therapy	Vaccum therapy and Herbal paste application
19	Sukshma Vyayama	Spinal Manipulation along with Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application
20	Sukshma Vyayama	Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Herbal paste application
21	Sukshma Vyayama	Massage therapy	Herbal paste application	Acupuncture therapy	Herbal paste application
22	Sukshma Vyayama	Spinal Manipulation along with Massage and IRR	Herbal paste application	Acupuncture therapy	Herbal paste application
23	Sukshma Vyayama	Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application
24	Sukshma Vyayama	Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Herbal paste application
25	Sukshma Vyayama	Spinal Manipulation along with Massage	Herbal paste application	Acupuncture therapy	Herbal paste application
26	Sukshma Vyayama	Massage and IRR	Herbal paste application	Acupuncture therapy	Herbal paste application

27	Sukshma Vyayama	Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application
28	Sukshma Vyayama	Spinal Manipulation along with Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Herbal paste application
29	Sukshma Vyayama	Massage therapy	Herbal paste application	Acupuncture therapy	Herbal paste application
30	Sukshma Vyayama	Massage and IRR	Herbal paste application	Acupuncture therapy	Herbal paste application
31	Sukshma Vyayama	Spinal Manipulation along with Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application
32	Sukshma Vyayama	Massage and Foot Reflexology	Herbal paste application	Acupuncture therapy	Herbal paste application
33	Sukshma Vyayama	Massage therapy	Herbal paste application	Acupuncture therapy	Herbal paste application
34	Sukshma Vyayama	Spinal Manipulation along with Massage and IRR	Herbal paste application	Acupuncture therapy	Herbal paste application
35	Sukshma Vyayama	Massage and Fomentation	Herbal paste application	Acupuncture therapy	Herbal paste application

Table 1 shows, the treatment given

DIET

A standardized therapeutic diet emphasizing wound healing and nutritional support was prescribed throughout the study period. The diet included: protein-rich foods (green gram, black gram, boiled eggs). Whole grains (raagi, red rice, black kavuni rice). Fresh fruits (pomegranate). Vegetable soups and green leafy vegetables. Antioxidant-rich herbal juices prepared from carrot, amla, and curry leaves.
Coriander tea. The dietary plan was designed to improve nutritional status, enhance tissue repair, and support immune function.

Table 2

DAYS	6:30AM	8 AM	11 AM	1 PM	4:30 PM	8 PM
1	Corriander Tea	Idly with Sambar	Pomegranate Juice	Rice with dhal and Ladies finger stew	Green gram Boiled	Raagi dosa with Mint Chutney
2	Carrot Amla and curry leaf juice	Red rice with maize porridge	Pomegranate Juice	Rice with dhal and Cabbage stew with boiled egg.	Veg soup	Dosa with Sambar
3	Carrot Amla and curry leaf juice	Idly with veg Kurma	Pomegranate Juice	Rice with dhal and beans stew	Green gram boiled	Upma with Mint Chutney
4	Carrot Amla and curry leaf juice	Pongal with sambar	Pomegranate Juice	Rice with dhal and beetroot stew	Raagi porridge	Idly with veg kuruma
5	Carrot Amla and curry leaf juice	Black gram Porridge	Pomegranate Juice	Rice with dhal and snake gourd stew with boiled egg	Black kavuni Porridge	Beetroot Chappathi with green gram kuruma
6	Carrot Amla and curry leaf juice	Red rice porridge with Tomato Chutney	Pomegranate Juice	Rice with dhal and carrot stew	Corriander Tea	Wheat dosa with mint Chutney
7	Carrot Amla and curry leaf juice	Black kavuni Porridge	Pomegranate Juice	Rice with dhal and bottle gourd stew with boiled egg	Veg soup	Raagi dosa with Mint Chutney.
8	Carrot Amla and curry leaf juice	Raagi dosa with Mint Chutney	Pomegranate Juice	Rice with veg kuruma and ridged gourd stew	Black gram Porridge	Dosa with Sambar
9	Carrot Amla and curry leaf juice	Wheat dosa with veg kuruma	Pomegranate Juice	Rice with sambar and Ivy gourd stew	Green gram Boiled	Upma with Mint Chutney
10	Carrot Amla and curry leaf juice	Red rice porridge with Tomato Chutney	Pomegranate Juice	Rice with dhal and boiled egg	Veg soup	Idly with veg kuruma
11	Carrot Amla and curry leaf juice	Idly with Sambar	Pomegranate Juice	Rice with dhal and Ladies finger stew	Green gram boiled	Beetroot Chappathi with green gram kuruma
12	Carrot Amla and curry leaf	Red rice with maize	Pomegranate Juice	Rice with dhal and Cabbage	Raagi porridge	Wheat dosa with mint

	juice	porridge		stew with boiled egg.		Chutney
13	Carrot Amla and curry leaf juice	Idly with veg Kurma	Pomegranate Juice	Rice with dhal and beans stew	Black kavuni Porridge	Raagi dosa with Mint Chutney.
14	Carrot Amla and curry leaf juice	Pongal with sambar	Pomegranate Juice	Rice with dhal and beetroot stew	Corriander Tea	Dosa with Sambar
15	Carrot Amla and curry leaf juice	Black gram Porridge	Pomegranate Juice	Rice with dhal and snake gourd stew with boiled egg	Veg soup	Upma with Mint Chutney
16	Carrot Amla and curry leaf juice	Red rice porridge with Tomato Chutney	Pomegranate Juice	Rice with dhal and carrot stew	Black gram Porridge	Idly with veg kuruma
17	Carrot Amla and curry leaf juice	Black kavuni Porridge	Pomegranate Juice	Rice with dhal and bottle gourd stew with boiled egg	Green gram Boiled	Beetroot Chappathi with green gram kuruma
18	Carrot Amla and curry leaf juice	Raagi dosa with Mint Chutney	Pomegranate Juice	Rice with veg kuruma and ridged gourd stew	Veg soup	Wheat dosa with mint Chutney
19	Carrot Amla and curry leaf juice	Wheat dosa with veg kuruma	Pomegranate Juice	Rice with sambar and Ivy gourd stew	Green gram boiled	Raagi dosa with Mint Chutney.
20	Carrot Amla and curry leaf juice	Red rice porridge with Tomato Chutney	Pomegranate Juice	Rice with dhal and boiled egg	Raagi porridge	Dosa with Sambar
21	Carrot Amla and curry leaf juice	Idly with Sambar	Pomegranate Juice	Rice with dhal and Ladies finger stew	Black kavuni Porridge	Upma with Mint Chutney
22	Carrot Amla and curry leaf juice	Red rice with maize porridge	Pomegranate Juice	Rice with dhal and Cabbage stew with boiled egg.	Corriander Tea	Idly with veg kuruma
23	Carrot Amla and curry leaf juice	Idly with veg Kurma	Pomegranate Juice	Rice with dhal and beans stew	Veg soup	Beetroot Chappathi with green gram kuruma
	Carrot Amla and curry leaf	Pongal with sambar	Pomegranate Juice	Rice with dhal and beetroot	Black gram Porridge	Wheat dosa with mint

24	juice			stew		Chutney
25	Carrot Amla and curry leaf juice	Black gram Porridge	Pomegranate Juice	Rice with dhal and snake gourd stew with boiled egg	Green gram Boiled	Raagi dosa with Mint Chutney.
26	Carrot Amla and curry leaf juice	Red rice porridge with Tomato Chutney	Pomegranate Juice	Rice with dhal and carrot stew	Veg soup	Dosa with Sambar
27	Carrot Amla and curry leaf juice	Black kavuni Porridge	Pomegranate Juice	Rice with dhal and bottle gourd stew with boiled egg	Green gram boiled	Upma with Mint Chutney
28	Carrot Amla and curry leaf juice	Raagi dosa with Mint Chutney	Pomegranate Juice	Rice with veg kuruma and ridged gourd stew	Raagi porridge	Idly with veg kuruma
29	Carrot Amla and curry leaf juice	Wheat dosa with veg kuruma	Pomegranate Juice	Rice with sambar and Ivy gourd stew	Black kavuni Porridge	Beetroot Chappathi with green gram kuruma
30	Carrot Amla and curry leaf juice	Red rice porridge with Tomato Chutney	Pomegranate Juice	Rice with dhal and boiled egg	Corriander Tea	Wheat dosa with mint Chutney
31	Carrot Amla and curry leaf juice	Idly with Sambar	Pomegranate Juice	Rice with dhal and Ladies finger stew	Veg soup	Raagi dosa with Mint Chutney.
32	Carrot Amla and curry leaf juice	Red rice with maize porridge	Pomegranate Juice	Rice with dhal and Cabbage stew with boiled egg.	Black gram Porridge	Dosa with Sambar
33	Carrot Amla and curry leaf juice	Idly with veg Kurma	Pomegranate Juice	Rice with dhal and beans stew	Green gram Boiled	Upma with Mint Chutney
34	Carrot Amla and curry leaf juice	Pongal with sambar	Pomegranate Juice	Rice with dhal and beetroot stew	Veg soup	Idly with veg kuruma
35	Carrot Amla and curry leaf juice	Black gram Porridge	Pomegranate Juice	Rice with dhal and snake gourd stew with boiled egg	Green gram boiled	Beetroot Chappathi with green gram kuruma

Table 2 shows, the diet protocol

RESULT

Table 1 summarizes the changes in wound dimensions over the study period. At baseline (Day 1), the wound measured 8.5 cm × 7.0 cm × 10.0 cm, with a calculated wound volume of 595 cm^3. Serial wound assessments demonstrated a progressive reduction in wound length, width, depth, and overall volume throughout the treatment period.

On Day 7, the wound dimensions decreased to 7.8 cm × 6.5 cm × 9.5 cm, corresponding to a wound volume of 482 cm^3, representing an 18.99% reduction compared with baseline. Clinical examination revealed a reduction in necrotic tissue and wound exudate, with the appearance of healthy granulation tissue within the wound bed. The wound margins showed evidence of contraction, and the surrounding tissue exhibited reduced edema and inflammation.

Wound Healing Progression

Table 3

Baseline	Length (cm)	Width (cm)	Depth (cm)	Volume (cm3)	Percentage improve from baseline
Day 1	8.5	7.0	10.0	595	0%
Day 7	7.8	6.5	9.5	482	18.99%
5^{th}- 6^{th}week	4	3.5	5.0	70	~90%

Table 3 shows, wound healing percentage

The wound showed progressive reduction in size, depth, and necrotic tissue, with evidence of granulation and healing.By the fifth to sixth week, wound dimensions had further decreased to 4.0 cm × 3.5 cm × 5.0 cm, with a calculated wound volume of approximately 70 cm^3, corresponding to an overall reduction of approximately 90% from baseline. The wound bed was predominantly filled with healthy granulation tissue, with minimal residual slough. Progressive wound contraction and epithelialization were observed, accompanied by a marked reduction in wound depth, indicating continued tissue repair.Serial wound measurements demonstrated a sustained and clinically significant reduction in wound size throughout the follow-up period. The quantitative reduction in wound volume was accompanied by qualitative improvements in wound bed appearance, including resolution of necrotic tissue, increased granulation tissue formation, reduction in exudate, wound contraction, and epithelial advancement. These findings indicate satisfactory progression of wound healing during the treatment period.

Pain Reduction

In parallel with the improvement in wound healing, pain severity decreased progressively over the course of treatment. The patient reported severe pain at baseline, which improved to moderate pain during the early follow-up period and further decreased to mild pain by Day 35. This reduction in pain was consistent with the observed decrease in wound size and improvement in wound bed characteristics, reflecting an overall favorable clinical outcome.

Table 4

Days	1-4	5-9	10-14	15-18	19-21	22-28	29-31	32-35
PS	9	8	7	6	5	4	3	2

Table 4 shows, the VAS

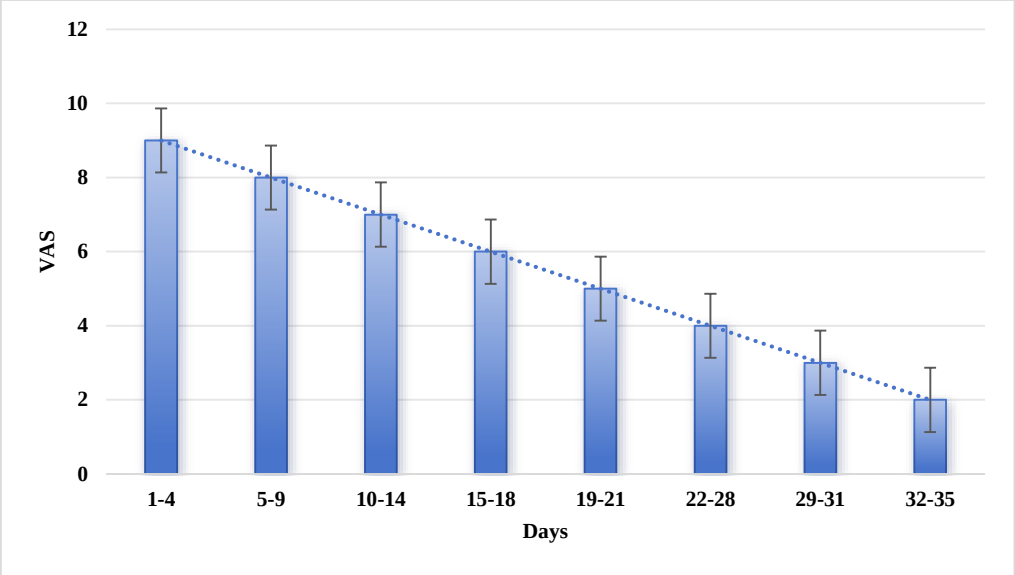

Fig:1 shows the pain score graph

DISCUSSION

Pressure ulcers, also known as decubitus ulcers, remain a major clinical concern, particularly among elderly patients with chronic comorbidities such as Hypothyroidism. Impaired metabolic function, reduced tissue perfusion, and delayed cellular turnover associated with hypothyroidism can significantly hinder wound healing, making management more complex and prolonged.

In this case, a 60-year-old female presented with a large, necrotic pressure ulcer over the left buttock, with substantial depth and volume at baseline. The chronicity of the wound, coupled with severe pain during the initial two weeks, underscores the multifactorial challenges often encountered in such patients. Conventional wound care alone may not always yield optimal results in similar scenarios, prompting consideration of adjunctive or integrative therapies.

The treatment strategy employed here combines multiple modalities: acupuncture, vacuum-assisted therapy, infrared radiation, massage, and topical herbal formulations. From a physiological standpoint, each component may have contributed synergistically to wound healing. Vacuum therapy likely promoted granulation tissue formation and exudate removal, while infrared radiation may have enhanced local blood circulation. Acupuncture, increasingly studied in pain and wound management, could have contributed to analgesia and improved microcirculation through neuromodulatory mechanisms.

The herbal formulations included several botanicals traditionally recognized for antimicrobial, anti-inflammatory, and wound-healing properties.Curcuma aromatica contains curcuminoids, which are renowned for their anti-inflammatory and antioxidant properties, while Azadirachta indica (neem) is generally acknowledged to have antibacterial and immunomodulatory activities.Similarly, Glycyrrhiza glabra (licorice) has been associated with enhanced epithelialization and reduced inflammation. The combination of these agents may have created a local environment conducive to tissue regeneration and infection control.

Before **After**

Fig 2 shows before and after wound healing

Clinically, the patient demonstrated a rapid and progressive reduction in wound size, with nearly 19% improvement within the first week and approximately 90% reduction in wound volume by the sixth week. This degree of improvement is notable given the initial wound severity. Pain reduction followed a parallel trajectory, transitioning from severe to mild over the course of treatment, which is a critical outcome given the impact of pain on patient mobility, quality of life, and healing.

CONCLUSION

This case demonstrates that an integrative treatment approach combining acupuncture, vacuum-assisted therapy, infrared radiation, massage, and topical herbal formulations was associated with substantial clinical improvement in a large necrotic pressure ulcer in a 60-year-old female with hypothyroidism. The patient showed progressive wound healing, with approximately 19% reduction in wound size during the first week and nearly 90% reduction in wound volume by the sixth week, accompanied by a marked decrease in pain severity from severe to mild.The observed outcomes suggest that the multimodal intervention may have acted synergistically by enhancing local circulation, promoting granulation tissue formation, facilitating exudate removal, reducing inflammation, controlling microbial burden, and supporting tissue regeneration. Such an approach may be particularly valuable in patients with hypothyroidism, where impaired metabolic function and delayed wound healing often complicate conventional management.Although the findings are encouraging, they are based on a single case and therefore cannot establish causality or be generalized to broader patient populations. Controlled clinical studies with larger sample sizes are needed to evaluate the efficacy, safety, and individual contributions of each treatment modality. Nevertheless, this case highlights the potential role of integrative therapies as adjuncts to standard wound care in the management of complex pressure ulcers and provides a basis for future clinical research in this area.

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