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Effectiveness of Aqueous onion extract (Allium Cepa ) on facial abrasions - A case report

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## Abstract

The presence of a scar resulting from injury due to trauma is frequently cosmetically and emotionally unacceptable to the patient as it serves as a constant reminder of the circumstances for which the scar was the result. Scars from minor injuries like abrasions which are advised selfcare treatment, are caused scar. Onion extract exhibits anti-inflammatory, antiproliferative, bacteriostatic, collagen down regulatory properties by its effect on fibroblast and mast cell. A 14 year old male patient reported to department of oral and maxillofacial surgery with diagnosis of abrasion over right side face region, and fracture of left side parasymphysis of mandible which was operated for open reduction and internal fixation. we advised patient application of onion extract over abrasion for 1 month and it showed positive result followed by complete healing on the skin without scar formation.

**Keywords:** facial abrasions, facial scars, onion extract (allium cepa)

### Introduction

Facial soft tissue injuries are road traffic accidents, gunshot injuries, animal bites all are reported to department of casualty. An emergency treatment includes the treatment of wounds for control bleeding and maintain vitals[1]. The commonest wounds presenting are lacerations, abrasions and burns, all of which respond rapidly to treatment and heal without complication[2].

Wound healing, a complex and interactive process, is divided into 3 overlapping phases: inflammation, tissue formation, and tissue remodelling[3&6].

Scars take many forms, depending on size, severity, type of injury and the anatomical location<sup>3</sup>. Therapeutic modalities for the prevention and management of scars have been postulated to act in 3 ways: correction of abnormal collagen metabolism, alteration of the immune/inflammatory response, or manipulation of the mechanical properties of wound repair[4&5].

There are different treatments available for scars, which are natural remedies and pharmaceutical remedies. Pharmaceutical remedies are as below colchicine, antihistamines, hyaluronidase, retinoic acid , steroids, vitamin E, silicone gel sheeting, cryotherapy<sup>\*</sup> vitamin C . Natural remedies are turmeric powder, onion extract (allium cepa), green tea, aloe-vera application[3].

Onion extracts exhibits anti-inflammatory, ant proliferative, bacteriostatic, and collagen down regulatory properties by its effect on fibroblast and mast cell. Although several studies have reported the successful cure of some features of scar tissue with onion extract [5,6,7,8,9,10]. However, existing studies on the effects of onion extract on scars are few and insufficient. [fig.1].



# Fig.1: Allium cepa Case report

A healthy 14-year-old boy was referred to the Department of Oral & Maxillofacial Surgery, following a severe facial trauma. He complained of pain in his jaw and was unable to open his mouth. Initial physical examination showed abrasions and lacerations on the facial skin.[fig.2] CT scan of facial bone revealed non displaced fracture of Para symphysis of right side mandible.[fig.3]



Fig.2: Physical examination showed abrasions and lacerations on the facial skin



Fig.3: CT scan of facial bone revealed non displaced fracture of parasymphysis of mandible on right side

Facial abrasion was seen over pre auricular and cheek right side of face. Deep Laceration was seen on the left side of the face at region of cheek. Patient was operated for open reduction and internal fixation under general anaesthesia.

Both the sides of extra oral wound were cleaned with betadine and saline. Left side lacerated wound was closed with 3-0 vicryl and 5-0 prolene[fig.4]. Parents were advised to apply freshly prepared onion juice over abrasion 3 times in a day for 4 weeks [fig.5].



Fig.4: Left side lacerated wound was closed with 3-0 vicryl and 5-0 prolene © 2020 IJDSIR, All Rights Reserved



Fig.5:Right side wound was kept open for application of Aqueous onion extract

We examined the progression of healing on the basis of size, colour. Six months follow up was taken for patient interval of 3 months [fig6, 7, 8]. Application of onion extract on our subject showed positive result and complete healing without scar formation.



Fig.6: Patient was followed up at 1 month



Fig.7: Patient was followed up at 3 month



Fig.8: Patient was followed up at 6 month

### Discussion

The presence of a scar resulting from surgery or injury due to trauma is frequently cosmetically and emotionally unacceptable to the patient as it serves as a constant reminder of the circumstances for which the scar was the result<sup>6</sup>.It can also lead pruritus, pain, disfigurement and psychological stress[6].

Due to trauma like slipped over pavement, dirt or glass, abrasions occurs in which removes superficial layer of skin and leaves raw, bleeding reticular layer of the dermis exposed.it may be due to exposure of nerve ending in reticular dermal layer. If surgeons/clinician don't take care of this things it will lead to scar formation. Scars from minor injuries like abrasions which are advised self-care treatment[2].

In 1999, Jackson and Shelton evaluated the effectiveness of topical onion extract gel in improving the appearance and symptoms of postsurgical scars compared to topical emollient in 17 subjects who had undergone Mohs surgery. Subjects were separated into 2 groups: onion extract group and emollient group. No statistically significant difference was found between pre- and posttreatment evaluations of scar erythema and pruritus in patients using topical onion extract gel. Showed positive result in size and colour of scar.[5]

Randomized, double-blinded, split-scar study by Chung et al.,in 2006, 24 subjects with new surgical wounds were treated with either onion extract gel or petrolatum ointment. There was no statistically significant difference in terms of scar symptoms, erythema, hypertrophy, and cosmetic improvement between the onion-extract treated side and the petrolatum-treated side.[7]

In 2012 Kumutnart Chanprapaph et al. done in vitro study which shows improvement in healing of wound. They advised patient application three times in a day over half suture marks of caesarean. There was tendency towards improvement of scar pliability. Overall colour and texture of scar did not improve. But it showed that early use of onion extract gel over scar resulted in the improvement of scar height. It can be used as adjunctive treatment to prevent hypertrophic scar from surgical wounds.<sup>s</sup>[8]

The literature supported and demonstrated that onion extract exhibited a beneficial medicinal properties like

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anti-inflammatory, ant proliferative, bacteriostatic, and collagen down regulatory properties by its effect on fibroblast and mast cell leas to reduction in scar formation among patients. This provide an aesthetic and psychological boon to the patient's mind-set. We employed these properties in the 14 year old for the reduction in the abrasion without leaving a mark on the face. We examined the progression of healing of the scar on the basis of size, colour. Follow up was taken till 6 months as complete healing of abrasion site undergoes complete epithelization in the mentioned period. Application of onion extract on our subject showed positive result in relative decrease in the size, colour. Followed by complete healing on the skin without scar formation.

### Conclusion

The onion extract application at abrasion site showed a proper healing without any scar formation. There are more applications of employment of onion extract with secondary pharmaceutical products to demonstrate the same results in a shorter duration of time. The use of onion extract can be initiated immediately whereas, micro needling and other therapies can only be undertaken after a period of 6 months.

There are less articles published in various international journals regarding the use of onion extract on face. This should be employed in various suture associated scar where microneedle therapy is used and can be avoided.

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