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Management of Necrotizing Fascitis by Surgical Debridement and Potato Peel Dressing

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Abstract

Necrotizing Fasciitis is a rare soft tissue infection encompass the fascia and subcutaneous tissue that can cause meteoric local tissue necrosis and life-threatening condition, The condition is difficult to diagnose early and even more crucial to manage effectively, Early detection ,appropriate antibiotics and surgery are key for improving, Potato peel has been used as a dressing for chronic wounds as a conservative method, Due to multiple medicinal properties of potato peel and its use as a dressing in other medical conditions, it is used as an adjunctive in the present case. Here we present a case of necrotizing fasciitis of odontogenic origin, treated by surgical treatment with debridement,drainage in combination with broad spectrum antibiotics and followed ' potato peel dressing', which has shown favourable results.

Keywords: Necrotising fasciitis, potato peel dressing, odontogenic infection, Debridement.

Introduction

Necrotizing Fasciitis is a severe inflammation of the muscle sheath that leads to necrosis of the subcutaneous tissue and adjacent fascia[1], Predominantly it is seen affecting the tissues of the abdominal wall, the perineum or the extremities. In the head and neck region, neck is commonly affected and etiology usually is odontogenic infection [2] In the present case necrotizing fasciitis seen in the mandibular region,potato peels have been used as a

dressing for burn wounds [3] Mortality rate has been reported to be varying from 4.2% to 75%.[1] The successful treatment is diagnosing at the earliest and surgical intervention along with antibiotic administration. Adjunctive treatment modalities that have been used in the management of necrotizing fasciitis are hyperbaric oxygen therapy, intravenous immunoglobulins, alginate and hydrogel dressing, vacuum assisted dressing, foam dressing and tissue guided regeneration using amniotic membrane [2,4,5] but in the present case we have treated using potato peel dressing.

Materials and Methods

Case Report: A 28 year old female patient reported to our unit with diffuse swelling in submandibular region with oozing pus from swelling which was surrounded by crustations for which patient was hospitalized and wound was cleansed and painted after which incision and drainage for a submandibular swelling secondary to odontogenic infection. After 3 days the incision site turned into an non healing wound (Fig. 1). The involved site measured to be 2.5x3cm. Skin surrounding the wound was found to be erythematous, Routine investigations and blood profile confirmed him as a systemically healthy patient, Debridement of the wound done thoroughly with Metronidazole and Hydrogen peroxide solutions followed by dressing daily, Dressing composed of a layer of freshly scraped potato peel which is unboiled/unsteamed as the medicinal properties leaches out if the potatoes are boiled,so the raw potato peel is preffered followed by external gauge pad. The potato peel was placed in direct contact with all the walls, margin and base of the wound for a period of 24 hours and changed every 24th hour for 7 days. This was supplemented with intravenous antibiotics.A combination of inj amoxicillin + clavulinic acid (1.2 gm) iv BID was administered every 12th hour and inj metrogyl 500 mg iv TID was administered every 6th hourly,The satisfactory results were obtained. The formation of healthy granulation tissue was hastened and good marginal healing was noted. The dimensions of the wound reduced remarkably from 2.5x3 cm upto 0.5x0.3cm (Fig. 3) in a period of one week indicating faster wound epithelization. The wound healed eventually.

Discussion

Necrotising Fasciitis was described by Hippocrates in the fifth century. [6] The risk factors can be Increasing age ,although the conditions can occur at any age, An accurate etiology is unknown, it can occur due to inoculation of the bacteria into the subcutaneous space with damage to the overlying skin, injuries lik cuts, burns, blunt and penetrating trauma, chronic skin conditions, animal and insect bites, child birth, intravenous injections and illegal drugs, postoperative infection, perirectal abscesses can be risk factors.[7-9] Important manifestation in Necrotising fasciitis is severe pain, pain precedes skin changes by 24-48 h and is present in >97.8% of patients.[10], the sequence is an extremely painful area transforms into a smooth swollen area of skin which causes skin changes and the sequence include erythema, induration of the skin followed by breakdown with purple bullae formation within 3 to 5 days and finally, the dull blue grey hue of frank skin necrosis.[1] Potato peel dressing speeds up the process of healing and convert the wound habitat into a sterile one. Tissues present in necrotizing fasciitis are hypoxic and the release of radical oxygen species leads to delayed healing. Due to which hyperbaric oxygen therapy was used for treatment of necrotizing fasciitis, potato peel has limited the use of hyperbaric therapy, Potato peels have various medicinal properties, They are a resource of phenolic compounds, flavinoids, glycoalkaloids and cell wall polysaccharides.[11,12], Glycoalkaloids present in potatoes such as alpha chaconine and alpha solanine are secondary metabolites which are deadly to

microorganisms.[11] They have beneficial properties like antipyretic, anti-inflammatory, and antibiotic activities against pathogenic bacteria, protozoa and fungi.[12] and hence can be used even when the wound is infected with pus, The acidic environment created by the destructive byproducts of bacteria is nullified by the potassium content present in the peel, The free radicals present in the wound are managed by the flavinoids, and the glycoalkaloid component of the peel overcomes the inflammatory component. This creates a sterile environment for the formation of a healthy, new granulation tissue.

Conclusion

Necrotising fasciitis is a rare and fatal condition which requires immediate attention ,hence early detection would be boon for surgeon and patient for the further treatment using different modalities.

References

1. De Tullio D, Rossi C, Bolzon S, Scagliarini L, Occhionorelli S. Necrotizing fasciitis:a surgical emergency. Updates Surg 2010; 62:83-87.
2. Machado NO, Necrotizing fasciitis (2011) The importance of early diagnosis, prompt surgical debridement and adjuvant therapy.North Am J Med Sci 3:107–118
3. Keswani M. H. and Patil A. R. (1985) The boiled potato peel as a burn wound dressing; a preliminary report. Burns 11, 220.
4. Nanda S et al (2001) Healing of cervical necrotizing fasciitis using amniotic membrane as a dressing material. Natl J Maxillofac Surg 2(2):147–151
5. Rothman PA et al (1990) Amniotic membranes in the treatment of necrotizing fasciitis complicating vulvar herpes virus infection.Obstet Gynecol 76:534–536
6. Descamps V, Aitken J, Lee MG. Hippocrates on necrotizing fasciitis. Lancet 1994; 344:556
7. childers BJ, Potyndy LD, Nachreiner R, et al. Necrotizing fasciitis: a fourteen-year retrospective study of 163 consecutive patients. Am J Surg 2002; 68: 109-116.
8. Elliott DC, Kufera JA, Myers RA. Necrotizing soft tissue infections. Risk factors for mortality and strategies for management. Ann Surg 1996; 224: 672-683.
9. Aronoff DM, Bloch KC. Assessing the relationship between the use of nonsteroidal anti-inflammatory drugs and necrotizing fasciitis caused by group A Streptococcus. Medicine 2003; 82(4):225–235.
10. Chelsom J, Halstensen A, Haga T, et al. Necrotizing fasciitis due to group A streptococci in western Norway: incidence and clinical features. Lancet 1994; 344:1111-1115.
11. Schieber A, Marleny D, Aranda S Potato Peels (2009): A source of nutritionally and pharmacologically interesting compounds—a review. In: Teixeira da Silva JA (ed) Food: Global Science Books, Japan
12. Friedman M, Lee K-R, Kim H-J, Lee I-S, Kozukue N (2005) Anticarcinogenic effects of glycoalkalods from potatoes against human cervical, liver, lymphoma, and stomach cancer cells. J Agric Food Chem 53:6162–6169.

Legends Figure

Figure 1: Submandibular Swelling With Crustations

Figure 2:Lateral view

Figure 4:placement of potato peel

Figure 5:5th post operative day

Figure 6:8th postoperative day