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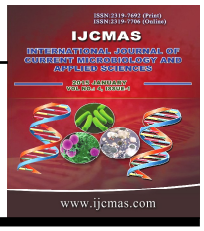

Case Study

Blistering Erysipelas of upper limb in an elderly male: A well known but under reported clinical entity

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Keywords

Blistering Erysipelas, Upper limb, Elderly male

A B S T R A C T

Blistering erysipelas, a common disease, is reported very less from Indian subcontinent. Most common sites involved are lower limb followed by face and trunk. In literature, erysipelas of upper limb is reported only in breast carcinoma patients who have received radiotherapy following mastectomy. We report a case of blistering erysipelas of upper limb in an elderly male following an insect bite. To best of our knowledge, this is the first case of its kind being reported from Himalyan region of Uttarakhand in India. This description seeks to emphasize the main risk factors and predisposing factors, in addition to some atypical features and current challenges involved in the differential diagnosis for erysipelas.

Introduction

Erysipelas is an acute inflammation of the skin, with marked involvement of cutaneous lymphatic vessels. It is a clinically recognisable entity, with sudden onset of fever and a painful erythematous swollen lesion, sharply demarcated from the normal skin. Erysipelas is most commonly caused by β-haemolytic *Streptococci* of group A, less so by group B, C, or G streptococci, and occasionally by *Staphylococcus aureus* (Bisno and Stevens, 1996; Mandell *et al.*, 2000). Various factors can facilitate the development of erysipelas. A case control study in seven hospital centres in France found that lymphoedema, venous insufficiency, being overweight and disruption of the skin barrier such as ulcer, wound and toe web intertrigo, were independent risk factors in erysipelas (Dupuy, 1999).

While cellulitis is an infection affecting the lower dermis and subcutaneous soft tissue, necrotising fasciitis is a deep-seated infection of the subcutaneous tissue with rapidly-progressive destruction of fat and fascia (Stevens *et al.*, 2005). However, it is interesting to note that erysipelas, a superficial dermis infection, may also share some features of deep seated infection, particularly bullae formation, as in blistering erysipelas. Therefore, erysipelas may be misdiagnosed as necrotising fasciitis with an unfavourable impact on patients, especially

by unnecessary investigations and aggressive treatment.

Case report: In February 2013, a 75 year old male presented with pain and redness of left forearm of two days duration, which was preceded by scratching an insect bite a day earlier. There was associated fever with chills of one day duration. Patient was hypertensive for five years and was on anti hypertensive medication. He denied any history of diabetes mellitus, alcoholism and tobacco use.

On examination, patient was overweight with BMI of 28.5kg/m^2. Temperature was 100ºF, pulse rate was 92 per min, blood pressure was 140/90 mm. Examination of head and neck was normal, except for a pale conjunctiva. Respiratory and cardiovascular systems were normal. There was an extensive lesion present on the left arm measuring 20X09cm, which was erythematous, bullous, hot and well demarcated, with bullae formation and lymphedema present.

The most remarkable laboratory data were elevated white blood cells at 8245/$mm^{3,}$ an ESR of 86mm/hour, C-reactive protein of 10.2 mg/dl and ASO titre of 600 IU/ml. Also, wound swab in duplicate from the lesion for culture were received in microbiology lab. A Gram stain was made from the wound swab which showed presence of polymorphonuclear cells with occasional Gram positive cocci arranged in chains. Blood and throat swabs were also received for culture. Wound swab was cultured on blood agar and incubated in 5-10% CO^2 at 37°C. On second day, blood agar plate showed presence of small pin point β hemolytic colonies which were bacitracin (0.04 U) sensitive (Figure 1). Grouping of the organism was done using Streptex kit (Remel Europe Ltd. Dartford, Kent, UK) and it was identified as Group A *Streptococci* (*Streptococcus pyogenes*).The isolate was found sensitive to penicillin, erythromycin and clindamycin by Kirby Bauer method. Throat swab yielded a growth of normal oropharyngeal flora however blood samples showed no growth and were reported as sterile after 7 days of aerobic incubation. The patient was treated with penicillin G (4 million units IV q6h) for 10 days, in addition to local treatment of the blistering erysipelas. Thereafter, the lesions gradually improved, and he was discharged on day 12 of his admission. During outpatient follow- up, he received prophylactic doses of benzathine penicillin (2.4 million units, intramuscularly) every three weeks for one year. Currently, one year after hospital discharge, he is enjoying good health and there has been no recurrence of erysipelas.

Discussion

This overweight elderly male with arterial hypertension presented with blistering erysipelas. There was neutrophilia, raised ESR, elevated CRP and high ASO titre. Also, wound swab culture was positive with growth of *Streptococcus pyogenes.* Blood and throat swab culture were negative for the same. One study from Sweden has documented culture positivity for skin lesions to be very good and for blood as only 5%; therefore, blood cultures seem to be of low value for patients who are not immunosupressed and have no signs of septic shock (Eriksson *et al.,* 1996). Respiratory tract specimens were seldom culture-positive in the same study, and their relevance to the skin infection is doubtful except for the cases of facial erysipelas.

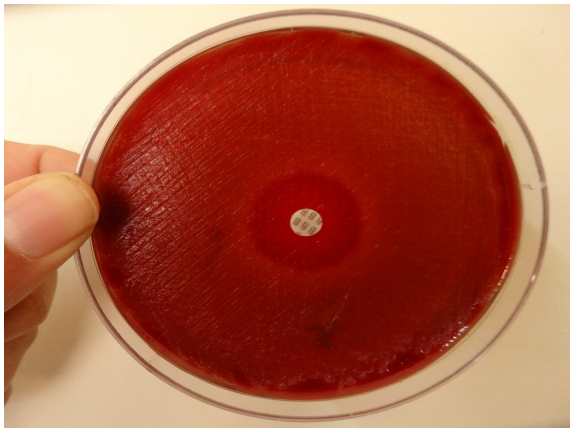
The pathogenesis of erysipelas begins with a disruption of the skin barrier, allowing the infective agent to enter. Skin disruption

occurs most commonly with abrasion, herpes simplex virus infections, interdigital tinea pedis, or other trauma, but may also result from insect bites, ulcers, puncture wounds, post-vaccination, or exposure of a neonate's umbilical stump (Mossad, 2004). Patients with erysipelas typically have a small erythematous patch that rapidly becomes bright red, edematous, indurated, and shiny with well-defined, slightly raised borders, well-demarcated from surrounding skin (Walsh, 1999). The most common site of infection is the lower limb, followed by the upper limbs and face. Upper limb is involved in patients undergoing treatment for breast carcinoma which was not the case in our patient. Both local and general predisposing factors for erysipelas have been reported, cutaneous barrier disruption playing a major role as local risk factor for erysipelas. Furthermore, many general predisposing have been said to be associated with erysipelas like obesity, cardiovascular disease, diabetes mellitus, venous insufficiency, malignancy and alcoholism of which only obesity has been shown to be a definitive risk factor of erysipelas (Dupuy, 1999, 2001; Lazzarini *et al.*, 2005; Swartz, 2005). Our case had two of the major predisposing factors mentioned above namely, disruption of cutaneous barrier (insect bite) and obesity along with hypertension.

With early diagnosis and proper treatment, the prognosis is excellent. Penicillin is the empirical antibiotic of choice, while macrolides are usually recommended in patients with allergy to penicillin (Mossad, 2004). In our patient the high index of suspicion and timely microbiological diagnosis lead to correct treatment and favorable prognosis. Since it is a localised infection and bacteraemia is rare, it is of no surprise that our patient had negative blood cultures. Our case shows that the yield of the isolating pathogen from an open skin lesion in blistering erysipelas is significant and may guide the choice and duration of the antibiotic regime.

Finally, this case emphasizes that blistering erysipelas though common but has hardly been reported from India. Moreover, upper limb involvement in absence of malignancy has not been reported before. Also, the organism is still sensitive to conventional regime in our set up as compared to west and disease has a favorable prognosis. Timely diagnosis and adequate treatment hold the key to good outcome.

Figure.1 Bacitracin sensitive isolate



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