Review Article

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RECURRENT FURUNCULOSIS OF THE UPPER LIP: AN EMERGING CONCERN

ABSTRACT

Furunculosis, is most commonly caused by the gram positive bacteria Staphylococcus aureus. Nasal carriage of S. aureus is the primary risk factor for recurrent furunculosis. major determinants of recurrent furunculosis are patients risk factors and staphylococcal colonization in close contacts. Proper identification of the risk factors and hygienic practices coupled with a long term coverage of oral and topical antibiotics is imperative to treat and reduce the risk of MRSA contamination and it's further recurrences.

Keywords: Furunculosis, Upper lip, Recurrent.

INTRODUCTION

Furunculosis, "a deep infection of the hair follicle appearing as red, swollen, and tender nodules on hair-bearing parts of the body," is most commonly caused by the gram positive bacteria "Staphylococcus aureus."[1] Nowadays, Methicillin-resistant Staphylococcus aureus (MRSA) has been identified as a major cause responsible for worldwide recurrence MRSA, produce a toxin named Panton-Valentine leukocidin (PVL) which is associated with follicular infections in general, having its strongest association with furunculosis and its recurrence.[2]

Nasal carriage of S. aureus is the primary risk factor for recurrent furunculosis.[2] There are two major determinants of recurrent furunculosis: risk factors and staphylococcal colonization in close contacts.[3] The most important independent predictor of recurrence is a positive family history. Direct physical contact with infected individuals, primarily family members or health care personnel, is the main risk factor for development of furunculosis.[1] The other independent predictors are anemia, previous antibiotic therapy, diabetes mellitus, previous hospitalization, multiplicity of lesions, personal hygiene and associated diseases.[4] Established skin diseases such as atopic dermatitis, chronic wounds, or leg ulcers increase the susceptibility to bacterial colonization and are more prone to develop furunculosis.[5] Immunodeficiency also plays an important role in recurrent skin and soft tissue infections (SSTI) including nasal furunculosis.[6] Obesity and hematological disorders are also predisposing factors.[1] Nearly all these risk factors are modifiable, preventable, and/or controllable by simple measures such as sound personal hygiene and a balanced diet.[4]

A general clinical examination should be performed, and investigations not only involve culture swabs of the lesions (preferably from pus or fluids from fluctuant boils, eventually obtained by incision) but also of the carrier sites such as nostrils. Depending on the history, culture swabs of the family members may be relevant. Hematological (full blood count, blood glucose, or glycated hemoglobin), urine and immunological tests are required to exclude any underlying diabetes, systemic infection or other internal disease.[1]

A complete spectrum of management includes identifying the risk factors, treating the causative agent and interrupting the chain of transmission of S. aureus. Therefore, the management of recurrent furunculosis is difficult, and often disappointing.[7]

CASE REPORT

An informed consent was taken prior to the study. A 61 year male, suffering from the furunculosis of the upper lip. He was a non-diabetic with no history of habit of nose picking, nose blowing, running nose or sneezing. There were no other family members suffering from similar lesions. He used to shave twice a week. On examination there was diffuse upper lip swelling with patchy multiple pus points over the moustache which started after shaving 6 days ago (figure I). Nasal examination revealed normal findings. He denied the habit of trimming mustache and nasal vibrissae. His hands were clean and nails were properly cut. Ear, Neck and other body sites were free of any skin lesions.

He was then prescribed with medications (local

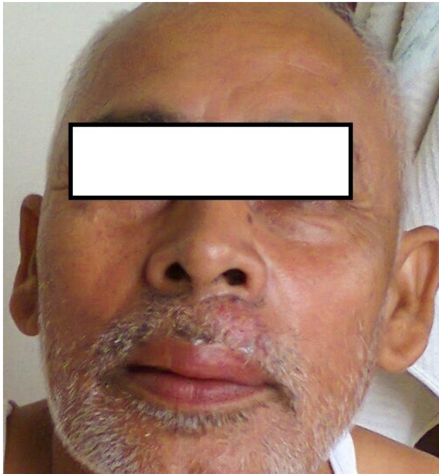
Figure I. Furunculosis upper lip

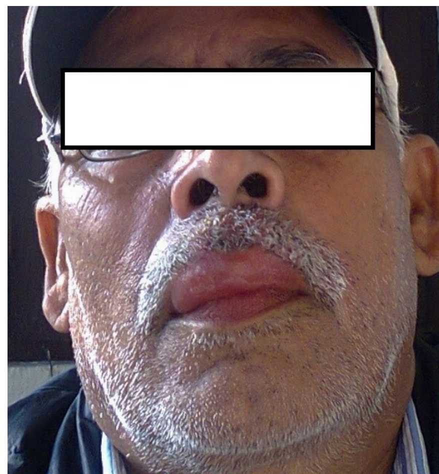
Figure II. Partial recovery

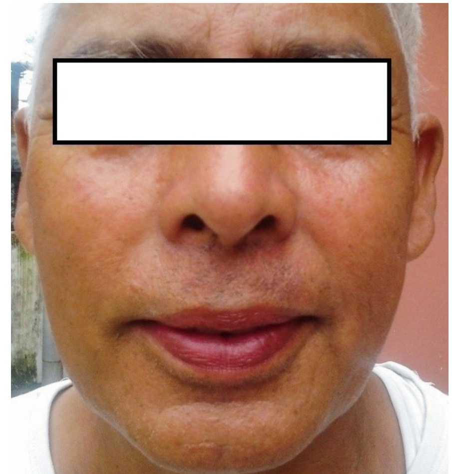
Figure III. Complete recovery

Mupirocin ointment and oral Amoxicillin-Clavulanate 625 mg thrice a day) for a week and was advised to follow up after a week. On follow-up, there was a slight improvement (decreased redness, swelling and pus points over the previous sites) but with newly formed pustules at other areas of the upper lip. He was then admitted and thoroughly worked up. The routine blood investigations (complete blood picture, renal function test, liver function test, serum electrolytes, blood sugar) were within normal limits and serological investigations (HIV, HBsAg, HCV) were also non-reactive. With help of a sterile 16 gauge needle, pustules were punctured and pus was sent for routine and sensitivity tests. A broad spectrum intravenous antibiotic (Ampicillin-Cloxacillin + Metronidazole) was started. Pus sent reports showed gram positive cocci, MRSA, sensitive to Flucloxacillin, Clindamycin and Doxycycline, while pus for KOH mount (smear) was negative for fungal hyphae. After a week of treatment with intravenous antibiotics (Flucloxacillin and Clindamycin), there was still an incomplete remission of the lesions (figure II.)

Patient was then counselled for the recurrent nature of the disease and discharged on strict advices including an oral Doxycycline 100 mg twice a day for 6 weeks, hand sanitation along with local application of mupirocin amongst the family members. Finally, the patient turned up happy with a complete disappearance of lesions at the end of six weeks (figure III.)

There has been no recurrence for last 30 months. This study seemed quite promising and encouraging for such recurrent and difficult to treat cases.

DISCUSSION

Nasal carriage of S. aureus is the primary risk factor for recurrent furunculosis and occurs in 60% of individuals.[2] Gilany and Fathy in 2009 reported, nasal carriage of S. aureus plays a key role in the development of skin infections and is a major reservoir of Methicillin resistant Staphylococcus aureus (MRSA).[4]

Engelhard et al., in 2013 commented that, the management of recurrent furunculosis is difficult, and often disappointing because it not only includes treatment of the causative agent but also interruption in the chain of transmission.[7] Our patient underwent aseptic pricking and drainage of the furuncles coupled with bacterial culture as similarly explained for management by Atanaskova and Tomecki in 2010.[8] With MRSA positive pus culture sensitivity report, our patient was treated with oral Doxycycline for 6 weeks which seemed rational enough though the treatment of recurrent furunculosis has been attempted either with various oral drugs like Clindamycin, Rifampicin, Tetracycline (Doxycycline or Minocycline), Sulfamethoxazole-Trimethoprim or intravenous drugs like Vancomycin, Linezolid , Daptomycin, Telavancin etc.[1] Davido et al., had also reported the CMC regimen: skin disinfection (Chlorhexidine), local nasal antibiotic (Mupirocin), and systemic antibiotic (Clindamycin) to be effective and safe with 87% remission beyond nine months.[3]

In 2009, El-Gilany and Fathy speculated S. aureus re-infection, may result from contact with infected family members, contaminated fomites, or from other extra-nasal sites.[4] Stulberg et al., had implicated that S. aureus as nasal

carriers are the primary source of recurrence and therefore suggested for eradication of the carrier state.[9] Our patient including the family members addressed the nasal carriers by regular hand washing and continual use of topical nasal mupirocin for 6 weeks and also took precautions in practising good hand hygiene and avoiding contact with contaminated skin as advised in a study by Atanaskova and Tomecki in 2010.[8] There has been no recurrences seen in our patient till 30 months of the study. This report is an encouraging attempt to establish promising evidence in the management of recurrent furunulosis.

CONCLUSION

Proper identification of the risk factors (family history, anemia, diabetes mellitus, and personal hygiene) and hygienic practices coupled with a long term coverage of oral and topical antibiotics is imperative to treat and reduce the risk of MRSA contamination and it's further recurrences.

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