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Original Research Paper

Dermatology

TRICHOMYCOSIS AXILLARIS: CASE REPORTS

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ABSTRACT Trichomycosis axillaris is an asymptomatic infection of the axillary hair.It is a bacterial infection. It is caused by a variety of aerobic Corynebacterium species. In this article, we present two case reports of Trichomycosis axillaris and the condition's etiology and clinical presentation are discussed. Both the cases highlight the occurrence of this condition in individuals more prone to sweating. The microbiological, epidemiology, clinical findings, diagnostic methods and treatment options are also discussed.

KEYWORDS : Trichomycosis, Corynebacterium, bacterial infection, Concretions, hyperhidrosis,

INTRODUCTION:

Trichomycosis more aptly known as trichobacteriosis, is a superficial bacterial infection affecting the hair shaft. The causative agents usually involve aerobic corynebacterium species, with Corynebacterium tenuis often implicated. It predominantly emerges in tropical and subtropical regions during periods of heightened temperatures. Prominent symptoms include excessive sweating, known as hyperhidrosis, and the occurrence of coloured sweat, termed chromhidrosis. The condition showed increased occurrence in men than women, which is attributed to the physiological differences in the skin properties. The condition is typically seen in individuals aged between their second and fifth decades of life. Clinically, it is characterized by the presence of adherent granules in yellow, red, black colours, better known as concretions. The disease can be diagnosed clinically aided by Wood's lamp examination. It is usually quite easy to combat the bacterial infection with the use of various topical antibacterial agents.

Case Reports:

Case report:1

A 27 years old male patient came to the dermatology OPD with complaints of yellow coloured, sticky material in the underarms which is malodorous, and yellow coloured staining of the clothes in the underarm region for the past 1 year and the condition worsened during summer. The patient is a carpenter by profession and is more prone to sweating. The patient did not complain of any itching and irritation. There is no history of application of deodorants and any other products in the underarms.

Figure 1- Yellow coloured concretions encircling the axillary hair shaft.

The examination of the axillae show yellow coloured concretions encircling the axillary hair and being firmly adherent to the hair shafts.(Figure 1) Wood's lamp examination shows pale yellow fluorescence (Figure 2)

Figure 2- Wood's lamp examination showing pale yellow fluorescence

Case Report:2

A 40 years old female patient who is a farmer by occupation came to the OPD with complaints of increased sweating and yellowish staining of clothes in the axillary region for the past 5 months. The patient also complained of malodorous sweat. There is no history of itching.

The examination of the axillae shows yellow coloured concretions encircling the hair shafts measuring about 1-2mm in size and firmly adherent to the hair shafts. (Figure 3) Wood's lamp examination of the axillae shows pale yellow fluorescence (Figure 4)

Figure 3 -Yellow coloured concretions encircling the hair shafts measuring about 1-2mm in size.

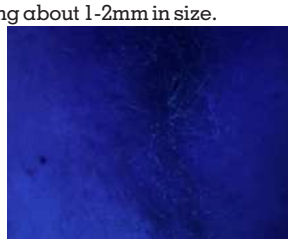

Figure 4- Wood's lamp examination showing pale yellow fluorescence

DISCUSSION:

Trichomycosis axillaris is a superficial bacterial infection. It normally affects the hair of the armpit, followed by the pubic and intergluteal hair, and hardly seen on the scalp.The name trichomycosis is a misnomer, Trichomycosis axillaris was initially thought to be caused by a fungus and and then the causative agent was found to be a diphtheroid, which was cultured and named as Corynebacterium tenuis.In the light of new taxonomic position of the genus Corynebacterium, however that particular species is no longer considered, and thus the majority of the reports are left as Corynebacterium sp. It is a gram positive, aerobic coryneform bacterium composed of bacillary and diphtheroid forms and these bacilli form a part of the normal skin microbiota. The common organisms implicated in the causation of this infection are Corynebacterium propinquum and Serratia marcescens. The rubra and nigra variants are thought to be caused by Micrococcus castelani and Micrococcus nigricans, although this has yet to be proven.Only one case in literature identified Dermabacter hominis as the agent causing trichomycosis axillaris.The disease is usually asymptomatic, since it does not cause any discomfort to the patient, this condition is usually under reported.

Trichomycosis axillaris predominantly occurs in hot and humid environments, with poor hygiene contributing to its prevalence. Reports suggest that transmission can occur among individuals living in close quarters, such as soldiers and athletes. The condition can occur in both males and females. However it is more prevalent in men, representing up to 94%, with a 9:1 ratio which can be explained by the fact that women tend to shave this area, which diminishes the risk. This gender disparity can be attributed to factors such as women's tendency to shave the affected area, which reduces the risk. Additionally, physiological differences between genders, including hormone production, sweating rate, sebum production, surface pH, skin thickness, and hair growth, influence the composition of the skin microbiota, further explaining the higher prevalence in men. Trichomycosis axillaris can occur across age groups but is most commonly observed between the second and fifth decades of life. Although primarily associated with increased apocrine secretion, cases have been reported in pediatric populations involving the scalp, where apocrine glands are inactive, suggesting a yet undefined etiopathogenesis. The initial step in pathogenesis involves changes in the local environment of the axilla, followed by bacterial adherence to the hair cuticle and the production of an insoluble cement-like substance. This encapsulated corynebacterium forms a biofilm on the hair surface, with electron microscopy revealing adherence to the hair surface rather than penetration of the medullary cortex. Depending on the variant, trichomycosis is categorized as trichomycosis flava (yellow), trichomycosis rubra (red), or trichomycosis nigra (black).

The most common symptoms associated with trichomycosis are hyperhidrosis, chromhidrosis , bromhidrosis and occasionally pruritus. On examination it is characterized by the presence of pigmented concretions measuring 1-2 mm in size in the axillary hair shafts. The concretions may be hard or soft and nodular or diffuse. Initially the concretions can only be palpated as thickening in the hair and then as the infection becomes chronic the concretions become discernible. The root and adjacent skin is normal, but the entire hair shaft may be involved. This condition has to be differentiated from nits in pediculosis, piedra,trichorrhexis nodosa, monelithrix.

Wood's lamp examination is useful for diagnosis and the most frequent fluorescence is pale-yellow. Others include red and black. Dermoscopy reveals waxy yellowish-white or brown concretions adherent to the hair. It may also show feather sign, brush sign, plume sign and skewer sign .Other dermoscopic findings include adherent concretions with a rosary of crystalline stone appearance. Potassium hydroxide mounts of the affected hair shafts show opaque material around the hair. Gram's staining shows gram positive organisms. The gold standard is culture of the bacterial organism, which can be done in blood agar at 37°Celsius.

Vigorous rubbing of the affected hair while washing, clipping of only affected hair in early infections or shaving of the entire axilla in severe infection are known physical measures to clear the infection . The infection tends to recur when the physical method is not combined with other modes of treatment. It can be treated by using topical treatments containing 3% sulfur, 2%formalin, 1%mercuric chloride or 2% sodium hypochlorite, antibiotics with fusidic acid, clindamycin, erythromycin. Benzoyl peroxide cleansers and gels are effective for treatment and for preventing recurrences. Proper hygiene practices and use of roll-on deodorants containing an aluminum chloride solution (15%-20%) may be used for treatment and prevention.

CONCLUSION:

Trichomycosis axillaris is a superficial bacterial infection predominantly affecting the hair in the armpit. Despite its common occurrence in hot and humid environments, it remains under-reported due its asymptomatic nature. While its pathogenesis remains incompletely understood, the main etiology implicated is the change in axillary microenvironment leading to bacterial micro adherence to the hair cuticle and subsequent biofilm formation. Diagnosis is mainly by clinical examination and treatment involves physical measures and topical antibacterial agents, along with proper hygiene for prevention. Trichomycosis axillaris is sometimes an incidental finding in some patients due to its quiescent nature. Therefore increased awareness among clinicians about the condition is important.

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