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A STUDY OF ATYPICAL PRESENTATION OF SCABIES IN BABYLON CITY

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ABSTRACT

Background: Scabies is the most common neglected tropical disease with dermatological manifestations, disproportionately affecting socially disadvantaged populations living in overcrowded settings. The diagnosis is clinical and requires a substantial degree of suspicion. Prompt diagnosis and rapid initiation of treatment are crucial to alleviate the burden of scabies. **Patients and Methods:** This cross sectional study included 65 patients with atypical scabies and was conducted in Babylon, Iraq during the period from 24/1/2024 to 13/6/2024. Confirmed diagnosis was conducted by visualizing eggs, mites, or feces on skin samples by either light microscopy, high-powered imaging, or dermoscopy. **Results:** Generalized itching without primary skin lesions was the most frequent characteristic (30.8%), followed by diffuse nodular scabies in infants (13.8%) and scabies localized to the axilla, hands, and feet, as well as the genital area (both 12.3%). Verrucous plaques in renal transplant patients on cyclosporine accounted for 10.8%, while hyperkeratotic scabies in leukemia patients and erythrodermic scabies in Cushing syndrome each represented 6.2% of the cases, and generalized tense bullous lesions were observed in 7.7% of patients. **Conclusion:** Atypical scabies is more prevalent among individuals over 60 years and infants under one year. Atypical manifestations vary with age and immune status. Older adults often present with generalized itching without primary lesions, while adult males only show scabies in the genital area. Infants often show scabies on the axilla, hands, and feet. Immunocompromised patients show verrucous plaques and hyperkeratotic scabies. The study emphasizes the importance of considering age, sex, and immune status in scabies diagnosis.

KEYWORDS: Immunocompromised patients show verrucous plaques and hyperkeratotic scabies.

INTRODUCTION

Scabies, an illness in humans caused by the mite Sarcoptes scabiei var. hominis, is a prevalent ectoparasitic dermatosis. In 2017, the World Health Organisation designated scabies as a neglected tropical disease. Identifying and treating individuals affected by this illness is essential for efficient patient treatment and for limiting disease transmission throughout the community.[1][2][3]

Scabies is highly contagious and is transmitted predominantly by direct personal contact. Fomite spread is much less frequent. Scabies outbreaks often stem from a single case within closed communities such as prisons, hospitals, and chronic health care facilities. Studies show that such outbreaks can prove difficult to control in spite of adequate infection control measures. Early clinical recognition is crucial to effective intervention but is often thwarted by the varied manifestations of this disease.[4]

A definitive diagnosis of scabies is established with the detection of mites, eggs, or faeces (referred to as scybala). In 2018, the International Alliance for the Control of Scabies (IACS) created standards to further scabies research, delineating characteristics for confirmed, clinical, and suspected diagnosis of the condition. The diagnostic criteria have been acknowledged and are anticipated to be used by healthcare professionals when evaluating individuals for possible scabies.[5]

This study was conducted aiming to evaluate the atypical presentation of scabies among Iraqi patients in Babylon City.

PATIENTS AND METHODS

This cross sectional study included 65 patients with atypical scabies and was conducted in Babylon, Iraq during the period from 24/1/2024 to 13/6/2024. Inclusion criteria were patients exhibiting skin lesions that deviate

from the classic scabies presentation (e.g., widespread scaling, thick crusts, minimal pruritus). Excluded patients were those presenting with classic scabies symptoms and signs without any atypical features.

Informed agreement was acquired from each participant, followed by a comprehensive dermatological history and examination for each case. Confirmed diagnosis was conducted by visualizing eggs, mites, or feces on skin samples by either light microscopy, high-powered imaging, or dermoscopy.

Data entry was done using Microsoft Excel 2019. Analysis was done using statistical package for social sciences (SPSS version 26).

RESULTS

The age distribution of the studied sample ranged from 1 month to 80 years with a mean of 34.8 ± 30.0 SD. Age group distribution is illustrated in table (1).

Table 1: Distribution of the studied sample according to age.

Age group	Frequency	Percentage
<1 year	18	27.7
2-10 years	5	7.7
18-39 years	18	27.7
40-59 years	2	3.1
≥60 years	22	33.8

Among the 65 participants, males constitute a significant majority, with 44 individuals, representing 67.7% of the sample. In contrast, females account for a smaller proportion, with 21 individuals, representing 32.3%.

Table 2: Distribution of the studied sample according to sex.

Sex	Frequency	Percentage
Male	44	67.7
Female	21	32.3

The distribution of the studied sample according to lesion characteristics is illustrated in table (3). Generalized itching without primary skin lesions was the most frequent characteristic (30.8%), followed by diffuse nodular scabies in infants (13.8%) and scabies localized to the axilla, hands, and feet, as well as the genital area (both 12.3%). Verrucous plaques in renal transplant patients on cyclosporine accounted for 10.8%, while hyperkeratotic scabies in leukemia patients and erythrodermic scabies in Cushing syndrome each represented 6.2% of the cases, and generalized tense bullous lesions were observed in 7.7% of patients.

Table 3: Distribution of the studied sample according to lesion characteristics.

Lesion characteristics	Frequency	Percentage
Generalized itching with no primary skin lesion	20	30.8
Diffuse nodular scabies in infants	9	13.8
Scabies localized to axilla, hands, and feet	8	12.3
Scabies localized to genital area	8	12.3
Verrucous plaques in renal transplant patients on cyclosporine	7	10.8
Generalized tense bullous lesions	5	7.7
Hyperkeratotic (crusted) scabies in leukemia patients	4	6.2
Erythrodermic scabies (exfoliative dermatitis) in Cushing syndrome	4	6.2

Table 4 reveals distinct associations between lesion characteristics and age groups. Generalized itching with no primary skin lesion was exclusively observed in individuals ≥60 years old (100%). Scabies localized to the axilla, hands, and feet was solely found in infants <1 year (100%), and diffuse nodular scabies was also exclusively seen in this age group (100%). Verrucous plaques in renal transplant patients on cyclosporine were only present in the 18-39 age group (100%), while hyperkeratotic scabies in leukemia patients was observed in the 40-59 and ≥60 age groups, with each accounting for 50% of these cases. Lastly, generalized tense bullous lesions were seen exclusively in the 2-10 age group.

Table 4: Distribution of Lesion characteristics according to age.

Lesion characteristics	Age					
	<1 year	2-10 years	18-39 years	40-59 years	≥60 years	Total
Generalized itching with no primary skin lesion	0	0	0	0	20	20
	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Hyperkeratotic (crusted) scabies in leukemia patients	0	0	0	2	2	4
	0.0%	0.0%	0.0%	50.0%	50.0%	100.0%
Verrucous plaques in renal transplant patients on cyclosporine	0	0	7	0	0	7
	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Generalized tense bullous lesions	0	5	0	0	0	5
	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Scabies localized to axilla, hands, and feet	8	0	0	0	0	8
	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Scabies localized to genital area	0	0	8	0	0	8
	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Diffuse nodular scabies in infants	9	0	0	0	0	9
	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Erythrodermic scabies (exfoliative dermatitis) in Cushing syndrome	1	0	3	0	0	4
	25.0%	0.0%	75.0%	0.0%	0.0%	100.0%
Total	18	5	18	2	22	65
	27.7%	7.7%	27.7%	3.1%	33.8%	100.0%

Table 5 illustrates the distribution of lesion characteristics by sex. Scabies localized to the genital area was exclusively found in males (100%), while other lesion types showed a mixed distribution between males and females. Generalized itching with no primary skin lesion was more prevalent in males (55.0%) compared to females (45.0%). Hyperkeratotic scabies in leukemia patients showed a higher frequency in males (75.0%) than in females (25.0%). Verrucous plaques in renal transplant patients on cyclosporine were also more common in males (71.4%) versus females (28.6%). Generalized tense bullous lesions, scabies localized to axilla, hands, and feet, and diffuse nodular scabies in infants also demonstrated male predominance, while erythrodermic scabies in Cushing syndrome was equally distributed between males and females.

Table 5: Distribution of Lesion characteristics according to age.

Lesion characteristics	Sex		Total
	Male	Female	
Generalized itching with no primary skin lesion	11	9	20
	55.0%	45.0%	100.0%
Hyperkeratotic (crusted) scabies in leukemia patients	3	1	4
	75.0%	25.0%	100.0%
Verrucous plaques in renal transplant patients on cyclosporine	5	2	7
	71.4%	28.6%	100.0%
Generalized tense bullous lesions	3	2	5
	60.0%	40.0%	100.0%
Scabies localized to axilla, hands, and feet	5	3	8
	62.5%	37.5%	100.0%
Scabies localized to genital area	8	0	8
	100.0%	0.0%	100.0%
Diffuse nodular scabies in infants	7	2	9
	77.8%	22.2%	100.0%
Erythrodermic scabies (exfoliative dermatitis) in Cushing syndrome	2	2	4
	50.0%	50.0%	100.0%
Total	44	21	65
	67.7%	32.3%	100.0%

Figure (1): a verrucous plaque observed on a 25-year-old male patient with renal transplantation and concurrent cyclosporine immunosuppressive therapy.

DISCUSSION

The study revealed that scabies was most prevalent among individuals aged ≥60 years (33.8%) and those <1 year (27.7%), with lower prevalence in other age groups. This finding aligns with global trends reported in a systematic review, which found higher scabies prevalence in the extremes of age, particularly among children and older adults.[6] Similarly, studies from Ethiopia and Turkey also noted higher prevalence rates among children and older populations.[7][8]

Our study observed a male predominance (67.7%) in scabies cases, consistent with findings from recent studies in Turkey that also reported male dominance, particularly among young adults and infants[8]. In contrast, studies from the UK and Ethiopia found a slightly higher prevalence among females.[7][9]

The present study found that generalized itching with no identifiable primary skin lesion was the most common atypical manifestation. A study on scabies epidemiology noted that itching is a common symptom, but it can occur without specific skin lesions, especially in older adults and immunocompromised individuals. These populations often exhibit atypical features such as diffuse itching or involvement of uncommon areas like the scalp and face, which complicates clinical recognition.[10] Similarly, a review on the pathophysiology of scabies-related itch emphasized that intense pruritus may occur independently of visible lesions, potentially due to immune responses or direct mite activity.[11]

This study found that located scabies was a common atypical manifestation. Scabies located to genital area were found exclusively in adult males. Several studies have highlighted the male genitalia as a common site of scabies infestation. A review on genital scabies noted that the male genital area, including the penis and scrotum, is a classical site for mite activity due to its thin stratum corneum, higher temperature, and mechanical friction. Lesions in this region can present as burrows, papules, or nodules and are often associated with intense pruritus. Another case series found that 8.4% of mites were isolated from the penis and scrotum and 4% from the buttocks, further emphasizing the predilection of scabies for this area in men.[12]

Scabies located to axilla, hands, and feet were found in infants and neonates. Localized scabies affecting the axilla, hands, and feet in infants and neonates has also been documented. A study on scabies in infants found that lesions commonly affect acral areas such as the palms, soles, and ankles. This predilection is likely due to prolonged close contact with caregivers during handling or feeding. The study also noted that burrows and papules were frequent lesion types in these areas among young children.[13]

This study also found that diffuse nodular scabies in infants was also a common atypical presentation. Nodular scabies is more common among infants and young children due to hypersensitivity to retained mite antigens. The nodules, typically erythematous and measuring 5–6 mm, were found in areas such as the groin, axillary folds, and buttocks. These lesions often persisted for months after the eradication of mites, reflecting the chronic nature of this manifestation.[14]

This study also found that scabies also manifested as verrucous plaques among renal transplant patients

receiving cyclosporine. Crusted scabies, a severe form of Sarcoptes scabiei infection, is characterized by thick, crusted plaques and is associated with immunosuppression. It has been observed in renal transplant recipients due to impaired cell-mediated immunity caused by medications like cyclosporine.[15][16][17]

This study found that hyperkeratotic (crusted) scabies in leukemia patients were among the atypical scabies presentation. Crusted scabies can mimic other dermatological conditions such as psoriasis or dermatitis, leading to delayed diagnosis. For instance, Mathew et al. reported a patient with chronic lymphocytic leukemia (CLL) initially presented with a rash resembling leukemia cutis. Later, the rash evolved into hyperkeratotic plaques and was confirmed as crusted scabies through skin biopsy.[18]

CONCLUSION

Atypical scabies is more prevalent among individuals over 60 years and infants under one year. Atypical manifestations vary with age and immune status. Older adults often present with generalized itching without primary lesions, while adult males only show scabies in the genital area. Infants often show scabies on the axilla, hands, and feet. Immunocompromised patients show verrucous plaques and hyperkeratotic scabies. The study emphasizes the importance of considering age, sex, and immune status in scabies diagnosis.

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