

# Becker nevi among patients in Aden, Yemen

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## Abstract

**Background:** Becker nevus typically presents as a hyperpigmented patch with irregular borders that gradually enlarges for a few years and then remains stable.

**Objective:** The objective of the study is to determine the occurrence of Becker nevus among Yemeni patients and to define its clinical characteristics.

**Materials and method:** This was a retrospective study of all patients with Becker nevus seen at two private clinics in Aden over a two years period, from January 2017 to December 2018.

**Results:** During the study period, 84 patients were diagnosed with Becker nevus in our private clinic. The female to male ratio was 2:1 (F= 66.7% vs. M= 33.3%). The mean age was 17.7 years (standard deviation = 3.9) (range: 10–25 years).

Most of the patients were from urban areas (92.9%). The most commonly involved site was the shoulder (32.1%), followed by chest (16.7%), arm (11.9%) and back (11.9%). Hypertrichosis was found in 32.1% of patients. Breast hypoplasia was noted in 2 patients (2.4%).

We concluded that Becker nevus is a common condition among Yemeni patients in our series of 84 patients. Females were more commonly affected. The most common sites of involvement were the shoulders and chest. About a third of patients had associated hypertrichosis whereas breast hypoplasia was less frequent.

**Key words:** Occurrence, Becker nevus, clinical characteristics

## Introduction

Becker nevus (BN), also called Becker melanosis and Becker pigmentary hamartoma, was first described in 1949 by William Becker, who reported the presence of unilateral hyperchromic skin lesions with hair in two young male patients [1]. It typically presents as a hyperpigmented patch with irregular borders that gradually enlarges for few years and then remains stable [1].

Becker nevus commonly manifests in the peripubertal age as a unilateral, solitary, acquired localized hyperpigmented patch composed of coalescing brownish macules. Hyperpigmentation usually increases for the first 2-3 years while hypertrichosis can appear after the pigmentation. However, the non-hypertrichotic variant is more common. "Progressive cribriform and zosteriform hyperpigmentation" may represent the non-hypertrichotic variant of Becker nevus. Although typically a unilateral condition, a few documented cases have been reported with multiple symmetrical and multiple unilateral Becker nevi [2,3,4].

Onset of Becker nevi is usually around puberty, with a prevalence of 0.25% to 0.5% in adolescent boys and young men [5,6,7]. The condition is rarely congenital, and the male-to-female ratio is approximately 5 to 1 [5,8].

Becker nevi occur in all races but are more common in nonwhites than whites [6]. The majority of cases are sporadic, but familial cases have also been reported [9,10].

We have not found in the published articles evidence of studies conducted in Yemen on this health problem. The aim of this study is to determine the occurrence of Becker nevus among Yemeni patients and to define its clinical characteristics.

## Materials and Method

A retrospective study was done of all patients who suffer from Becker nevus and who were seen in our private clinic in Al-Mansoura, Aden over a two-years-period, from January 2017 to December 2018. The patients' files were reviewed to obtain information about sex, age, residency, location of nevus, size of nevus, hypertrichosis and associated features.

The data was entered into a computer and analyzed using SPSS version 17, statistical package. For variables difference, chi-square tests, and P values were calculated

## Results

During the study period, 84 patients were diagnosed with Becker nevus skin disease in our private clinic. They were 56 females (66.7%) and 28 males (33.3%) with a female to male ratio 2:1 (Table 1).

The 84 patients had a mean age of 17.7 (standard deviation = 3.9) (range: 10–25 years). The mean age of male patients was  $18.8 \pm 3.7$  years (range: 12 – 25 years) and the mean age of female patients was  $17.2 \pm 3.9$  years (range 10 – 25 years).

There was no statistical relation between mean values ( $p > 0.05$ ). Most of the patients ( $n= 78$ ; 92.9%) were from urban areas.

The most commonly involved site was the shoulder ( $n= 27$ ; 32.1%), followed by chest ( $n=14$ ; 16.7%), arm and back at equal involvement ( $n=10$ ; 11.9%), abdomen and scapula at equal involvement ( $n=6$ ; 7.1%), thigh ( $n= 5$ ; 6.0%), face ( $n=4$ ; 4.8%), and shoulder with scapula ( $n=2$ ; 2.4%) (Table 2). Hypertrichosis was found in only 27 cases (32.1%) distributed as follows: 17 (20.2%) in males and 10 (11.9%) in females. Ipsilateral breast hypoplasia was noted in 2 cases (2.4%). Nevus size ranged between 6 to 40 cm and mean size was  $14.7 \pm SD 6.4$  cm.

## Discussion

In the present study 84 patients diagnosed with Becker nevus were identified with a female to male ratio 2:1. Literature search showed variations in the incidence between females and males. Some studies have reported that males are 4-6 times more commonly affected [11,12,13].

On the contrary, a published study by Danarti et al [14] reported that it is more common in females (F : M ratio = 1.5:1).

The variations can be explained by absence of hypertrichosis and easily noticeable breast hypoplasia in females [14,15,16].

In the current study the 84 patients had a mean age of  $17.7 \pm 3.9$  years (range: 10–25 years). The mean age of male patients was  $18.8 \pm 3.7$  years (range: 12 – 25 years) and the mean age of female patients was  $17.2 \pm 3.9$  years (range 10 – 25 years). There was no statistical relation between mean values ( $p > 0.05$ ).

Rasi et al [17] reported in their study that the 47 Becker nevus patients had a mean age of 17.1 years (range: 12–42 years). The mean age of male patients was 17 years (range: 12–42 years) and the mean age of female patients was 22.85 years (range: 15–29 years). Our results were consistent with these results.

**Table 1: Demographic characteristics of the study patients (n=84)**

Variables	Ratio	Means $\pm$ SD	No	%		
<b>Sex:</b>	2 : 1					
Females					56	66.7
Males					28	33.3
<i>Ratio female : male</i>						
<b>Age group (years):</b>					30	35.7
10 – 15					34	40.5
16 – 20					20	23.8
21 – 25						
<b>Age range (years):</b>						
Total mean age $\pm$ SD					17.7 $\pm$ 3.9	
Male mean age $\pm$ SD	18.8 $\pm$ 3.7					
Age range (years)	12 – 25					
Female mean age $\pm$ SD	17.2 $\pm$ 3.9					
Age range (years)	10 - 25					
P-value	> 0.05					
<b>Residency:</b>						
Urban			78	92.9		
Rural			6	7.1		

SD = Standard Deviation

**Table 2: Distribution of affected body site by BN among the study patients**

Localization	No	%
<b>Body site:</b>		
Shoulder	27	32.1
Chest	14	16.7
Arm	10	11.9
Back	10	11.9
Abdomen	6	7.1
Scapula	6	7.1
Thigh	5	6.0
Face	4	4.8
Shoulder & scapula	2	2.4
<b>Hypertrichosis:</b>		
<b>Exist:</b>		
Males	17	20.2
Females	10	11.9
<b>Not Exist:</b>	57	67.9
<b>Associated features:</b>		
Left breast hypoplasia	1	1.2
Right breast hypoplasia	1	1.2
No	82	97.6
<b>Nevus size (cm):</b>		
Range	6 – 40 cm	
Mean $\pm$ standard deviation	14.7 $\pm$ 6.4 cm	

**Figure 1: Some Becker nevi with their localization:**

- a) Scapula classic site of Becker nevus in young female
- b) Right side of chest extending to shoulder
- c) Left arm extending to chest with hypertrichosis
- d) Lower face extending to neck
- e) Buttock with left thigh associated with hypertrichosis



a



b



c



d



e



In our study result (n= 78; 92.9%) were from urban areas. We do not expect the incidence to be lower in rural areas but we assume that most patients were from urban sites because the healthcare service is more accessible and the data was only from two private clinics

In the present study we found the most commonly involved site was the shoulder (32.1%), followed by chest (16.7%), arm (11.9%) & back (11.9%), abdomen and scapula each one with (7.1%), thigh (6.0%), face (4.8%), and shoulder with scapula (2.4%).

Kumar et al [18] reported in their study that the usual site of Becker nevi is described as shoulder, anterior chest, or scapular region; it can occur over unusual sites such as face, neck, abdomen, and thighs. Reports of it occurring over legs are very few. Kumar et al [18] added Becker's nevi presents as a unilateral irregular area of hyperpigmentation with geographic contour which usually occurs over shoulder and anterior chest.

There are various reports of Becker's nevus occurring over atypical sites such as face, neck, and limbs [18].

In a case series, Becker nevus was reported to occur at various atypical sites such as flank, pubic area, right arm, upper leg [19]. Becker nevus rarely occurs in the lower limb. In a Jordanian survey done among males, they reported a prevalence of 6.5% of which only 1.1% of males showed localization of Becker's nevus over legs [20]. Manoj et al [21] reported a male patient with Becker's nevus occurring over knee joint. Turan et al [22] reported it occurring on ankle in a male patient.

In the current study we observed hypertrichosis was found in only 27(32.1%) of the 84 patients. The hypertrichosis typically develops after the hyperpigmentation and the hairs become progressively coarse with time. Some recent studies have suggested that hypertrichosis may not be associated with a majority of the cases of BM [5,12,23,24].

Tawran et al [20] reported in their study in Jordan that significant hypertrichosis was observed in 284 patients (75.4%), which is a high incidence compared to our study.

Hypertrichosis with terminal hairs was observed on the BN of 70% of young Italian men [25] and in 56% of young French males [26] but only in 23.1% of Brazilian teenager males [6]. In a very recent study of BN in children, hypertrichosis was seen in 31.3% of 118 patients; the majority of patients with hairless BN were younger than 10 and more than 50% had mild hypertrichosis which was located only on the center of the lesions [27].

Also we found 1(1.2%) as left breast hypoplasia and 1(1.2%) of right breast hypoplasia. Previous studies reported that hypoplasia may involve the entire breast or only the nipple and areola. In female patients, this is the most frequently reported anomaly to be associated with

Becker nevus [28,29]. Rasi et al [17] mentioned that in their study they found only 2 (2.4%) female patients had ipsilateral breast hypoplasia.

## Conclusion

It was difficult to obtain published studies on Becker nevi from Yemen. Therefore, this study can be considered as the first work which reported on this health problem in Yemen. Most of the patients were from urban areas (92.9%) and the most commonly involved site was the shoulder (32.1%), followed by chest (16.7%), arm (11.9%) & back (11.9%). Hypertrichosis was found in (32.1%) of the patients. Further studies on the incidence, prevalence and treatment procedures for Becker nevi are needed.

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