Short communication

Prevalence of *Pityrosporum orbiculare* on normal skin of Iraqi children

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مدى انتشار الوُبَيْغاء المدوَّرة على جلد الأطفال العراقيين الأصحّاء

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الخلاصة: بغية تحديد السن الذي تقع فيه الإصابة بالوُبَيْغاء المدوَّرة *Pityrosporum orbiculare* ومعرفة مدى انتشارها على البشرة الطبيعية للأطفال العراقيين الأصحاء، قمنا بإجراء مسح على 110 من الأطفال الأصحاء في بغداد، ممَّن يتمتعون ببشرة سويَّة من الناحية السريرية، وذلك خلال الفترة من نيسان/إبريل إلى تشرين الأول/أكتوبر 1998. وقمنا باستفراد جرثومة الوُبَيْغاء المدوَّرة وذلك على مستنبت يحتوي على الببتون والغلوكوز والخميرة، كما يحتوي على الكلورامفنيكول والسيكلوهيكسيميد، وتكسوه طبقة من زيت الزيتون. وقد عُثِرَ على هذه الجرثومة على جذع 77.5٪ من الأطفال الذين تتراوح أعمارهم بين 10-14 عاماً، و27.5٪ من الأطفال ما بين 5-9 أعوام، و6.6٪ من الأطفال الذين هم أقل من خمسة أعوام.

ABSTRACT To determine the age incidence and prevalence of ***Pityrosporum orbiculare*** on the normal skin of healthy Iraqi children, we carried out a survey of clinically normal skin of 110 healthy children in Baghdad during April 1998–October 1998. We isolated ***P. orbiculare*** on a peptone–glucose–yeast extract medium containing chloramphenicol and cycloheximide, and overlaid with olive oil. The organism was present on the trunk in 77.5% of children 10–14 years, 27.5% of children 5–9 years, and 6.6% of children < 5 years.

Prévalence de *Pityrosporum orbiculare* sur la peau normale d'enfants iraquiens

RÉSUMÉ Afin de déterminer l'incidence selon l'âge et la prévalence de ***Pityrosporum orbiculare*** sur la peau normale d'enfants iraquiens en bonne santé, nous avons réalisé une étude de la peau cliniquement normale de 110 enfants en bonne santé à Bagdad d'avril à octobre 1998 . Nous avons isolé ***P. orbiculare*** dans un milieu peptone-glucose-extrait de levure contenant du chloramphénicol et de la cycloheximide, et enrichi en lipides (huile d'olive). Le micro-organisme était présent sur le tronc chez 77,5 % des enfants âgés de 10-14 ans, chez 27,5 % des enfants âgés de 5-9 ans et chez 6,6 % des enfants de moins de 5 ans.

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Introduction

Pityrosporum orbiculare was the name given by Gordon to the spherical lipophilic yeast which he cultured from the lesions of pityriasis versicolor [*1*]. *Malassezia furfur* has been recorded as the causative organism of pityriasis versicolor. The yeast phase of this organism is classified as *P. orbiculare* [*2,3*].

P. orbiculare can be isolated not only from pityriasis versicolor scales, but also from normal skin. Roberts found *P. orbiculare* to be present on the trunk in more than 92% of the participants in his study [*4*]. Faergemann and Bernarder cultured *P. orbiculare* from the back in 90% of healthy individuals in a study done in Sweden [*5*]. Also, Sharquie, Al-Rubyae and Al-Rawi cultured *P. orbiculare* from the back in 92% of healthy Iraqis in a Baghdad study [*6*].

Several studies have been conducted to detect the age incidence of this yeast. In a survey of children, from newborn to age 15 years, *P. orbiculare* was not cultured from normal-looking skin on the back before the age of 5 years, but was found in 10% of 5-year-old children, 23% of 10-year-old children and 93% of 15-year-old children [*7*]. In Caracas, *P. orbiculare* was present in 45% of children 8–10 years old and in 70% of children 13–15 years old [*8*]. It was subsequently suggested that colonization of normal skin with *P. orbiculare* begins with the increase in sebum excretion in pre-puberty and puberty [*7,8*].

Therefore, we conducted this study to identify the age incidence of this yeast on the skin of healthy Iraqi children.

Methods

The study was conducted at the Department of Dermatology, Baghdad Teaching Hospital from April 1998 to October 1998.

We studied 110 normal children. They were all living in Baghdad. Ages ranged from 1 to 14 years. All were healthy children with normal looking skin. And all the skin at the sample sites was clinically normal and had not been affected in the past as far as their parents could recall. Any child on systemic therapy with steroids or antibiotics was excluded as well as those treated with topical applications.

We used peptone–glucose–yeast extract medium containing peptone, 10 g/L, Bacto-agar, 18 g/L, glucose, 40 g/L and yeast extract, 0.1 g/L. The pH was adjusted to 5–6. After autoclave sterilization, chloramphenicol 50 mg/L, gentamycin 100 mg/L and cycloheximide 0.5 g/L were added to the medium.

From each child, skin scrapings were taken from the back in the interscapular region. Scrapings were taken using a fresh, sterile scalpel blade for each site sampled. The specimens were transferred directly to the culture plate and distributed evenly over the entire surface of the plate. Cultures were incubated at 37 °C. Seven days later, the cultures were examined macroscopically and microscopically; if no growth had occurred at that time, they were retained and checked 14 days later.

P. orbiculare was recorded as positive only if thick-walled, spherical budding forms were seen. The presence of clusters was also noted.

Results

The prevalence of *P. orbiculare* increased with age: 6.7% of samples from children < 5 years, 27.5% of those from children 5–9 years and 77.5% of those from children 10–14 years were positive (Table 1).

On the medium, *P. orbiculare* grew in a confluent manner with a slight tendency to solitary colonies, white to cream in colour

Table 1 **Incidence of *Pityrosporum orbiculare* on the skin of healthy children in 3 age groups**

Pityrosporum orbiculare	Age (years)						Total
	< 5		5–9		10–14		
	No.	%	No.	%	No.	%	
Positive	2	6.7	11	27.5	31	77.5	44
Negative	28	93.3	29	72.5	9	22.5	66
Total	30	27.3	40	36.4	40	36.4	110

(Figure 1). Microscopically, clusters of round, budding cells were seen (Figure 2).

Discussion

Interestingly, this is the first time *P. orbiculare* has been isolated from the skin of healthy children under 5 years old—2 of the positive cultures were from 4-year-old children. In contrast, Faergemann and Fredriksson did not detect the organism in children < 5 years old [*7*].

In agreement with the results of other studies we found that the prevalence of *P. orbiculare* increased with increasing age [*7,8*].

Our results indicate that *P. orbiculare* (the causative agent of pityriasis versicolor) is part of the normal skin flora in Iraqi children and colonization starts during the period when the sebaceous glands become active. This explains why it is difficult to eradicate this infection and at the same time indicates that excessive washing and sterilization of the clothes of people suffering from the condition is not necessary.

Our study was the first in which *P. orbiculare* was detected on the skin of

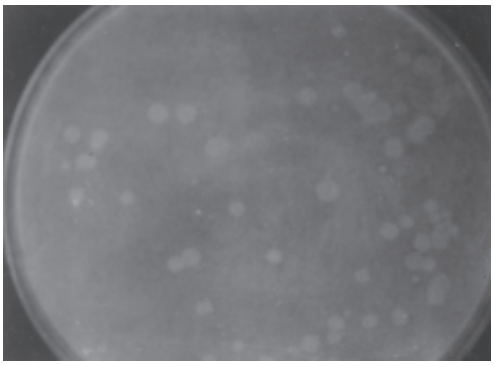

Figure 1 **Colonies of *Pityrosporum orbiculare* on Sabouraud's dextrose agar after three days incubation at 37 °C**

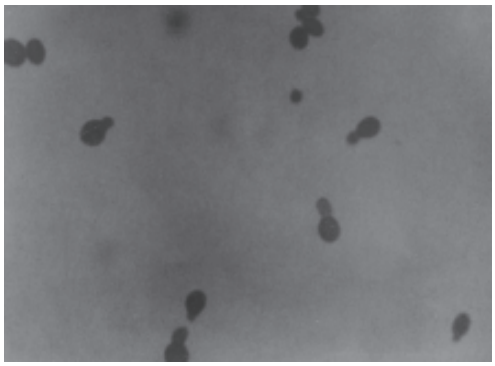

Figure 2 **Microscopic view of *Pityrosporum orbiculare***

healthy children in our country. We conclude that *P. orbiculare* can be detected on the normal skin of healthy children, and is even found in some children < 5 years old. This could possibly be attributed to early activation of sebaceous glands in addition to other factors, but further studies would be needed to determine this.

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