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Halo Formation Around Cherry Angiomas: A Rare But Substantial Finding

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
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Background: There are conflicting reports on the prevalence of a pale halo around cherry angiomas. The aim of this study was to determine the actual frequency.

Material/Methods: I meticulously inspected trunks of 488 patients aged 40 years or older who had at least 1 truncal cherry angioma.

Results: The median number of truncal cherry angiomas was 4. Their median size was 3 millimeters. A pale halo around cherry angiomas was seen in 5.1% of the patients or in 2.0% of the lesions. It was more prevalent in patients aged 60 years or older and in patients having more than 4 lesions. A pale halo was found more frequently around lesions larger than 3 millimeters.

Conclusions: These findings show that halo formation around cherry angiomas is a rare but substantial change, especially in the late phase of their natural course. However, these findings should be confirmed in more comprehensive studies, including patients in all age groups and examining the whole skin surface.

MeSH Keywords: **Aging • Epidemiologic Studies • Hemangioma, Capillary • Pallor • Soft Tissue Neoplasms • Vascular Neoplasms**

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Background

Cherry angiomas, also known as senile angiomas, are common vascular benign tumors. They generally develop after the third decade of life [1]. In the textbook titled “Enzinger and Weiss’s Soft Tissue Tumors”, individual lesions have been described as follows: “ruby red papules with a pale halo” [2]. According to this description, one may think that a pale halo is a usual feature of a cherry angioma. Moreover, the “pale halo” is one of the key features of cherry angiomas listed in the textbook titled “Diagnostic Pathology-Vascular” [3]. On the other hand, in “Regional Derm”, an online dermatology resource for health care professionals, it has been stated that a halo rarely forms about a cherry angioma (http://www.regionalderm.com/Regional_Derm/files/capillary_hemangioma.html). Furthermore, Kocabaş et al. has recently reported a case of cherry angioma surrounded by a depigmented halo and has emphasized that “halo angioma” is a new description since the halo phenomenon is not an expected finding for cherry angiomas [4]. Due to these conflicting statements in the literature about the prevalence of a pale halo around cherry angiomas, I decided to evaluate this frequency in my adult patients with cherry angiomas.

Material and Methods

During February and March 2017, 488 patients aged at least 40 years who had at least 1 cherry angioma on the trunk were examined in detail for this vascular benign tumor. Only truncal lesions were taken into evaluation. First, they were counted. Then, their locations were recorded by region: chest, abdomen, upper back, and lower back. Their sides were also written down. Their longest diameters were measured using a metric ruler with 1-millimeter divisions. Finally, each angioma was thoroughly inspected visually to determine whether it was surrounded by a pale halo. A pale halo was defined as a circumferential zone of lighter skin color than its surroundings, which was discerned by the naked eye adjacent to and encircling a cherry angioma.

Statistical evaluation was done using chi-square tests with the Statistical Package for the Social Sciences (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp).

This study was approved by the Ethics Committee of the Medical Faculty of Çukurova University, Adana, Turkey. Informed consent was obtained from all patients.

Results

Of 488 patients, 277 (56.8%) were females and 211 (43.2%) were males. Their ages ranged from 40 to 91 years. The median age was 59 years. The number of truncal cherry angiomas ranged from 1 to 110. The median number of lesions was 4. The total number of lesions in all 488 patients was 3479. Of 3479 lesions, 1137 (32.7%) were located on the chest; 846 (24.3%) on the abdomen, 947 (27.2%) on the upper back, and 549 (15.8%) on the lower back. Of the lesions, 48.6% were on the right side and 51.4% were on the left side. The size of lesions ranged from 2 to 10 millimeters. The median size of lesions was 3 millimeters. Only 69 lesions (2.0%) had a pale halo (Figure 1) and pale halos were observed in only 25 patients (5.1%).

The 488 patients were divided into 2 subgroups according to the median age of 59 years (Table 1). There were 252 patients aged equal to or less than 59 years and 236 patients older than 59 years. The frequency of occurrence of a pale halo around cherry angiomas was 1.2% in the relatively younger patients and 9.3% in the older patients ($p<0.001$). The patients were divided into 2 subgroups according to a median of 4 truncal cherry angiomas. There were 253 patients with 4 or fewer lesions and 235 patients with more than 4 lesions. The prevalence of halo formation was 0.8% in patients with fewer lesions and 9.8% in patients with more lesions ($p<0.001$). The 3479 lesions were divided into 2 subgroups according to a median

Figure 1. A pale halo around a cherry angioma: (A) the original image, (B) its color-adjusted copy, and (C) its illustration.

Table 1. Frequencies of halo formation around cherry angiomas in subgroups of patients.

Variable	Total no. of patients	Patients with halo formation		p-Value
		n	(%)	
Sex				0.364
Male	211	13	(6.2)	
Female	277	12	(4.3)	
Age (years)				<0.001
≤59	252	3	(1.2)	
≥60	236	22	(9.3)	
No. of cherry angiomas				<0.001
≤4	253	2	(0.8)	
≥5	235	23	(9.8)	

Table 2. Frequencies of halo formation around cherry angiomas in their subgroups.

Variable	Total no. of lesions	Lesions with halo formation		p-Value
		n	(%)	
Site				0.570
Chest	1137	25	(2.2)	
Abdomen	846	20	(2.4)	
Upper back	947	15	(1.6)	
Lower back	549	9	(1.6)	
Side				0.708
Left	1788	37	(2.1)	
Right	1691	32	(1.9)	
Diameter (mm)				<0.001
≤3	2568	32	(1.2)	
≥4	911	37	(4.1)	

lesion size of 3 millimeters (Table 2). There were 2568 lesions sized 3 millimeters or smaller and 911 lesions larger than 3 millimeters. The prevalence of halo formation was 1.2% in smaller lesions and 4.1% in larger lesions ($p<0.001$). This frequency was not statistically different between subgroups created by sex of patients or by distribution of lesions.

Discussion

In the textbook titled “Enzinger and Weiss’s Soft Tissue Tumors”, an older book was used as the source of the statement that a pale halo around a cherry angioma is a common finding [2]. This book was written by William Bennett Bean

and titled with “Vascular Spiders and Related Lesions of The Skin” [5]. In this interesting and detailed book, under the title of “Vascular Lesions Which Increase With Aging”, 13 pages are devoted to cherry angiomas and 1 page is devoted to halos around cherry angiomas. The observed that such halos were seen most readily when the skin was cooled by fanning and that no blood went into such halos when injected just below the skin surface near cherry angiomas. He qualified the occurrence of an anemic halo of pale skin immediately surrounding a cherry angioma to be “a salient feature” [5]. Although “saliently” is not a commonly term to describe the frequency, this qualification may be responsible for statements that halo formation is a usual feature of cherry angiomas.

In contrast, in 2011 Kocabas et al. stated that the halo phenomenon was not an expected finding for cherry angiomas [4]. In 2015, Moiin et al. reported a case with multiple cherry angiomas surrounded by sharply demarcated depigmented rings and wrote that their case [6] and the case reported by Kocabas et al. were a “novel” or “new” entity. According to these case reports, one may think that a pale halo is an extremely rare feature of a cherry angioma. However, I observed halo formation around cherry angiomas in 5.1% of my patients. Halo formation was found around 2.0% of their cherry angiomas. So, according to my recent observation, halo formation around cherry angiomas is neither “usual” nor “extremely rare”. Although rare, it may be seen in a substantial portion of patients or lesions.

However, my rates cannot directly represent the real frequency of halo formation around cherry angiomas, since my study has some limitations. Firstly, I did this study on my patients, instead of on a general population. Moreover, in this study, all age groups were not included and the whole body was not examined in patients studied. Finally, I did not perform any procedure to verify the existence of halos around cherry angiomas, such as the one described by Bean [5].

Another important finding of my study was that halo formation was more frequent in some subgroups of patients or lesions. Before discussing this, I should explain why I did not evaluate the duration of lesions. In my opinion, it is almost impossible for most persons to remember the exact date of appearance of each lesion on their skin. However, some parameters such as the age of the person, the total number of lesions, and the size of a given lesion may indirectly represent a long-term existence of cherry angiomas. They generally develop after the third decade of life [1], so it is more probable that a patient much older than this age has cherry angiomas with a long duration. Cherry angiomas may increase in number over time [5], so if a patient has numerous lesions, the duration of his disease is probably long. Cherry angiomas may also

increase in size over time [3], so if a lesion has a large diameter, its duration is probably long. I found the frequency of halo formation around cherry angiomas to be higher in the following subgroups: patients older than 59 years, patients having more than 4 lesions, and in lesions larger than 3 millimeters. Since these subgroups may indicate a long-term existence of cherry angiomas, halo formation may be a late phase in the natural course of a cherry angioma.

Two examples from other angiomas may support my impression that a halo may develop around a cherry angioma to be a sign of its evolution and/or involution. Firstly, Chisti et al. reported a case that presented as a faint erythematous oval patch with a dark red macule at its periphery and a pale halo at its surrounding area and evolved into a fully developed capillary hemangioma [7]. They considered the so-called “pallor sign” to be an indicator of a hemangioma in evolution. Secondly, a surrounding pale halo is among the common clinical features of congenital hemangiomas [8] and it is more characteristic of rapidly involuting congenital hemangiomas [9].

Conclusions

Halo formation around cherry angiomas is a rare but substantial change, especially in the late phase of their natural course. This is a subject which is worthwhile to investigate both epidemiologically and pathogenetically.

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Conflict of interest

None.

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