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Infantile Hemangioma in Guinea: Epidemio-Clinical Aspects

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Abstract **Original Research Article**

Introduction: Infantile hemangioma is a benign vascular tumor secondary to dermal proliferation. It can occur in 10 % of infants under one year of age and up to 25% in premature babies with a birth weight of less than 1500 g. The objective of this study was to determine the hospital prevalence of infantile hemangioma in Guinea. ***Material and methods:*** Single-center descriptive cross-sectional study with prospective recruitment of all cases of infantile hemangioma diagnosed in the Dermatology – MST department. It covered all children aged 0 to 6 years seen for consultation.in the department in which the diagnosis of hemangioma had been selected based on a range of clinical arguments and whose parents had consented to participate in our study. ***Results:*** The prevalence of infantile hemangiomas was 0,6%. The average age of the patients was 5,82 months with a female predominance. He lived mainly in an urban area. Risk factors were dominated by maternal multiparity followed by maternal age greater than 38 years. Added to this are premature delivery, low fetal birth weight, preeclampsia and finally obstructed delivery. Tuberous hemangioma was the most common, i.e. 53,6%, with a predominance of the cephalic topography. ***Conclusion:*** Infantile hemangioma is a pathology whose prevalence remains low. The nature of the lesions and the cephalic topography remain the main reasons for consultation in our context. The absence of functional signs often determines self-medication, resulting in a delay in treatment.

Keywords: Child, hemangioma, epidemiology, clinic.

INTRODUCTION

Infantile hemangioma (HI) is a benign vascular tumor secondary to a polyclonal dermal proliferation of endothelial cells which form new vessels (angiogenesis) [1]. This benign tumor affects 5 to 10 % of infants under one year old. It can reach 25 % of premature babies with a birth weight of less than 1500 g. Family history of hemangioma, advanced maternal age, maternal multiparity and certain placental injuries (detachment, trophoblast biopsy or preeclampsia) are often associated risk factors. Newborns are often born in a context of antenatal or intranatal hypoxia [2, 3].

During the first weeks of life, a white macule or poorly limited telangiectatic red layer appears spontaneously secondary to vasoconstriction. This macule often goes unnoticed. Evolution occurs in three phases: first a proliferative phase, then a stabilization phase and finally, a slow involution phase [2, 4].

The prevalence of infantile hemangioma is rarely reported in sub-Saharan Africa. In Mali, according to a study carried out in 2017 at the Dermatology department of Bamako, the prevalence of infantile hemangioma is 0,11% [5, 6].

In Guinea, to our knowledge, apart from four published clinical cases, there are no epidemiological data on infantile hemangioma. With the aim of reporting the prevalence of infantile hemangioma in Guinea, we carried out this work whose objective was to determine the hospital prevalence of infantile hemangioma in the Dermatology department of the Donka national hospital.

METHODS

Type and duration of study

We carried out a single-center descriptive cross-sectional study with prospective recruitment of all cases of infantile hemangioma diagnosed in the Dermatology – MST department of the Conakry

University Hospital, between January 1, 2019 to January 31, 2022.

Study site

The dermatology service is the only service for the management of skin conditions in Guinea. It is located in the commune of Dixinn in Conakry, a port city occupying a 36 km long peninsula which plunges into the Atlantic Ocean.

Study population and inclusion criteria:

Our study included all patients with infantile hemangioma, consulted at the dermatology department of Donka National Hospital during the study period.

The diagnosis of hemangioma was based on a combination of anamnestic and clinical arguments in patients aged 0 to 6 years: maternal history, postpartum period, time to appearance of the primary elementary lesion, clinical form and topography.

For each patient, the following data were systematically specified: age, gender, residence, time of onset, duration of progression, maternal age at delivery, maternal history, complications during delivery, birth weight, clinical form of hemangioma, and topography.

Non-inclusion criteria: All probable cases were excluded.

Study variables

These include qualitative variables and quantitative variables relating to sociodemographic and clinical data.

Data gathering

The data were collected using a structured questionnaire, administered to all those accompanying patients meeting our selection criteria. The data collection team was made up of all doctors specializing in dermatology practicing in the department and who carry out consultations. The interviews were carried out mainly in three local languages (Soussou, Poular, Maninka) and a few in French.

Data analysis

Data was collected on a pre-established survey form. The counting was done manually. Epi-Info version 7.2.2 software was used for data entry and analysis. Descriptive statistics were performed for sociodemographic characteristics.

Ethics approval and consent to participate

The data was collected anonymously. To comply with ethical principles, written informed consent (assent for minors) was obtained from each parent or guardian of the child. The confidentiality of data collected from participants was ensured during and after the survey.

RESULTS

Out of a total of 6040 patients seen in outpatient clinics, 41 cases of infantile hemangioma were collected, representing a hospital prevalence of 0,6%. We recorded 8 (19,5%) boys and 33 (80,5%) girls. The average age of the patients was 5,82 months with extremes of 1 and 24 months. Among the patients, 31 (75,5%) resided in the capital Conakry (Ratoma = 20, Dixinn = 3, Matam = 3, Matoto = 5). Seven (24,5%) patients came from localities surrounding Conakry (4 from Dubréka, 3 from Coyah) and from two regions, notably 2 from Boké and 1 from Kindia (Table 1). The risk factors found were maternal multiparity (parity greater than 4) in 12 cases, maternal age greater than 38 years in 9 cases, premature babies in 6 cases, low birth weight (less than 1400 g) in 7 case, preeclampsia in 4 cases and 3 cases of obstructed delivery. The majority of patients resorted to self-medication (68,2%) based on ointment applied locally before the consultation. No functional signs were found in all patients. The average time to appearance of the initial lesion was 7 days with extremes of 1 and 40 days. The semiological lesions were marked by erythematous plaques in 22 cases (53,6%) followed by protruding swellings under normal or bluish skin in 34,2%. A prominent swelling topped with erythematous plaque was found in 12,2%. The clinical picture was dominated by tuberous or superficial hemangioma in 53,6% (22 cases) followed by the deep form in 14 patients or 34,2%. The mixed form was found in 5 patients or 12,2%. The lesions were located in the head region (Picture 1) in 65,9% (27 patients) followed by the upper (Picture 2) and lower (11 patients) limbs then the buttocks (Picture 3) and genitals (3 patients). There were a single lesion in 15 (36,5%) patients and multiple lesions in 26 (63,5 %) patients (Table 2). Paraclinical exploration in search of an extracutaneous location and/or an associated impact (cardiac Doppler ultrasound, abdominal ultrasound, complete blood count, electrocardiogram) did not find any particularity.

Picture 1: Tuberous hemangioma of the right hemiface

Picture 2: Tuberous hemangioma of the left forearm

Picture 3: Ulcerated tuberous hemangioma of the intergluteal fold

Table 1: Socio-demographic characteristics of 41 patients seen for consultation for hemangioma

Socio-demographic characteristics	Number of cases Workforce Percentage (%)	
Sex		
Boy	8	19,5
Girl	33	80,5
Residence		
Conakry	31	75,6
Outside Conakry	10	24,4
Risk factors		
Maternal multiparity	12	29,2
Maternal age greater than 38 years	9	21,9
Low birth weight	7	17
Premature babies	6	14,7
Preeclampsia	4	9,8
Obstructed delivery	3	7,3
First resorts		
Self-medication	28	68,2
Traditional medicine	11	26,9
Modern medicine	2	4,9

Table 2: Clinical characteristics of the 41 cases of infantile hemangioma

Clinical features	Number of cases Workforce Percentage (%)	
Number of lesions		
Unique	15	36.5
More than one lesion	26	63.5
Semiological lesions		
Erythematous plaques	22	53.6
Prominent swellings under normal skin	14	34.2
Prominent swellings topped with erythematous plaque	5	12.2
Topography of lesions		
Cephalic	27	65.9
Upper and lower limbs	11	26.8
Buttocks and external genitalia	3	7.3
Clinical forms		
Tuberous or superficial	22	53.6
Deep	14	34.2
Mixed	5	12.2

DISCUSSION

We conducted a single-center descriptive cross-sectional study lasting 3 years between January 1, 2019 and January 31, 2022 at the Dermatology – MST department of Conakry University Hospital, covering all cases of infantile hemangioma diagnosed. This diagnosis of hemangioma was made based on anamnestic and clinical criteria, not allowing other similar lesions to be formally excluded. However, this study allowed us to note the attention paid by parents to the occurrence of any skin abnormalities in children. During this data collection, we recruited 41 patients out of a total of 6040 patients consulted, representing a hospital prevalence of 0,6%. In black Africa, few studies have been done. Our result is superior to that of Dicko A *et al*., [5] in Mali in 2016 which found 0,11% cases of infantile hemangioma. On the other hand, our result is clearly lower than that of Giachetti A *et al*., [7] in Italy in 2013 which reported 5% cases of hemangioma in their study. In the Maghreb, cases of hemangiomas requiring treatment with propanolol have been reported [5]. The prevalence of hemangioma remains higher in Europe where it varies between 5 to 10 % [8]. In the Dutch population, it is 9,9% [9]. Hemangioma remains a pathology easily diagnosed on white skin than on black skin. The incidence on white skin (1,7%) is higher than that on black skin (0,6%) [10]. The color of hemangiomas in subjects with dark phototypes does not often have the bright red character described in the literature [5]. This dark phototype can also hide small hemangiomas which go unnoticed during consultations in our health structures or even sometimes underdiagnosed due to ignorance.

In our series, the mean age was (5,8 months) similar to that described in the literature and which corresponds to the proliferative phase of the hemangioma covering on average the first six (6) months of infant life [5, 11, 12].

In our cohort as in those of Dicko A *et al*., [5] in Mali and Zaher *et al*., [13] in Egypt, all sexes were affected with a female predominance (80%). This female predominance could be explained by the unsightly nature of hemangioma lesions located in areas that are often not covered.

The risk factors found in our cohort are identical to those reported in the literature [9, 14]. In our context, they were dominated by maternal multiparity followed by maternal age above 38 years. Added to this are premature delivery, low fetal birth weight, preeclampsia and finally obstructed delivery. However in Romania in 2017, Bota M *et al*., [15] reported in their study a predominance of low birth weight in the majority of cases as a risk factor for infantile hemangioma.

The use of self-medication is a frequent practice in our context, exposing children to a delay in adequate care but also to the occurrence of certain complications such as ulceration.

In our series as in that of Dicko A *et al*., [5] in Mali, from El Feki N *et al*., [16] in Tunisia but also Barreau M in France, a predominance of tuberous hemangioma (53,6%) was found followed by the deep form within a practically short average time of appearance (7 days in our context). This could explain the protruding erythematous character with a nippled and irregular surface of the lesions producing a strawberry appearance that is more visible and alarming than the other two clinical forms, hence a frequent reason for consultation. Added to this is the parents' interpretation of the sudden appearance of a protruding lesion in a visible area in a newborn.

CONCLUSION

Infantile cutaneous hemangioma is the most common benign tumor in children. Our work finds a hospital prevalence close to that reported by other studies in sub-Saharan Africa. The nature of the lesions and the head topography remain the main reasons for consultation. The absence of functional signs often leads to self-medication, sometimes even to neglecting the pathology. Decentralized continuing medical training in health structures would greatly contribute to early diagnosis of infantile hemangioma in our context.

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Author contributions

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