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Characteristics of Hemangioma Patient in Palembang

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Abstract

Introduction: Hemangioma is a form of vascular anomaly that has various characteristics. Characteristics data, region, size of lesion, complications, and choice of treatment both operative and non-operative in hemangioma patients, especially at the RSUP Dr. Mohammad Hoesin, Palembang. This study aims to collect data and evaluate it.

Methods: This study used secondary data which is medical records of all hemangioma cases treated at RSUP Dr. Mohammad Hoesin Palembang on January 1, 2019 to December 31, 2019. Data analysis used descriptive analysis, where the data that has been collected will be grouped and presented in the form of a frequency distribution table for each characteristic.

Results: There were 61 medical records that meet the study criteria. The age at diagnosis was 2 (range 0-8) weeks. The number of female patients (n = 34; 55.74%) was found to be more than men (n = 27; 44.26%). Infantile hemangiomas (n = 39; 63.9%) were found to be more common than congenital hemangiomas (n = 22; 36.1%). Most of the hemangiomas were in the face (n = 36; 59%). The median size of hemangioma lesions in this study was 3 (range 0.5-10) cm. There were 18 hemangioma lesions that had complications (29.5%). The majority of hemangioma patients underwent operative management (n = 47; 77%), others underwent non-operative management (n = 14; 23%).

Conclusion: Hemangiomas are found commonly in female patients. The location of the lesion is predominantly in the facial area. Nearly a third of hemangioma lesions have complications with the most common complication were ulcers. Hemangioma management was dominated by operative management which may be associated with a large number of hemangioma lesions in sensitive locations and complications.

Keywords: hemangioma, lesion, complication, ulcers.

1. Introduction

Vascular anomalies are a broad spectrum of diseases ranging from just 'birthmarks' to being life threatening. Vascular anomalies consist of two parts, namely vascular tumors and vascular malformations. One form of vascular tumor is hemangioma which is a type of tumor commonly found in infancy and childhood.[1] Hemangiomas can then be further divided into several types depending on the course of the disease, cell composition, immunohistochemical features, and pathology of the tumor.[2]

Hemangiomas can appear and develop in any part of the body. Usually hemangiomas appear at birth or 2 to 8 weeks after birth and then develop rapidly in the first 6 to 12 months after birth. Hemangiomas will usually involute by themselves through a process of cell death that occurs progressively with age. Generally hemangiomas do not infiltrate the surrounding tissue, however, sometimes they can be destructive.[3,13] Although hemangiomas are usually benign and *self-limited*, sometimes hemangiomas can also cause pain, ulceration, and bleeding during proliferation, scarring / disability, as well as functional disorders[2,4], so that it can interfere with the quality of life of the patient.

Research in the United States reports that hemangiomas occur in 10-20% of white babies, 1.4% of black babies, and 0.8% of Asian babies. The incidence of hemangiomas was also noted to be more common in female babies than in boys. The ratio of the incidence of hemangioma according to the sex of women to men in the combined study between races and ethnicities was

2.4: 1[5,6], in contrast to studies that were specifically carried out on Chinese race and ethnicity, namely 1.77: 1.[7] This illustrates that Hemangioma characteristics can vary depending on various factors that exist in a population area.

A study found that the incidence of hemangioma has an increasing trend over the last three decades. The incidence rate of hemangioma in 1976-1980 was recorded at only 0.97% and then continued to increase until it was observed that in 2006-2010 it was 1.97% with a peak incidence in 2001-2005 of 2.25%.[4] This may indicate that over time, exposure to risk factors for hemangioma has increased as well as changes.

Based on the variation of hemangioma characteristics that exist in various previous studies and the limited data regarding hemangiomas, especially at the Moehammad Hoesin General Hospital, Palembang, a study was conducted which aimed to determine the data on the characteristics of hemangioma that occurred at the Moehammad Hoesin General Hospital Palembang.

2. Methods

This study used secondary data in the form of medical records for all hemangioma cases handled at Dr. Moehammad Hoesin Palembang on January 1, 2019 to December 31, 2019. Data that met the inclusion and exclusion criteria were then included in the study.

Data collection included name, age at diagnosis, gender, type of hemangioma, histopathology, location, number of lesions, size of hemangioma, complications, and management / therapy. The collected data is then checked for the completeness of the required data. The data was then tabulated, coded, and entered into a computer program.

Data analysis uses descriptive analysis, where the data that has been collected will be grouped and presented in the form of a frequency distribution table for each characteristic.

Before the research is conducted, ethical clearance will be requested from the Medical and Health Research Ethics Commission (KEPK), Faculty of Medicine, Sriwijaya University.

3. Results

The number of samples obtained was as many as 61 medical records that met the research criteria for further data extraction. Patient data extracted from medical records were then processed and analyzed descriptively. The results of the assessment of patient characteristics are presented in table 1.

Table 1. Patient Characteristics

Variable	n (%)	Median (Min – Max)
Age (week)		2 (0 – 8)
Gender		
Male	27 (44.3 %)	
Female	34 (55.7 %)	

Table 1 shows that the patient's age has an abnormal distribution so that the 61 samples are described in median (min-max) form, which is 2 (0-8) weeks. The number of female patients (34; 55.74%) was found to be more than the number of male patients (27; 44.26%).

Table 2. Characteristics of Hemangioma

Variable	N (%)	Median (min – max)
Hemangioma type		
Hemangioma Infantile	39 (63.9)	
Congenital Hemangioma	22 (36.1)	
Histopathology	45 (73.8)	
Hemangioma	32 (52.5)	
Non-hemangioma	13 (21.3)	
Hemangioma location		
Face	36 (59)	
Head neck	6 (9.8)	
Torso	4 (6.6)	
Extremities	14 (23)	
Perineum	1 (1.26)	
Number of Lesions		
Solitary	51 (83.6)	
Multiple	10 (16.4)	
Size (cm)		3 (0.5 – 10)
Complicated Lesions	18 (29.5)	
Ulcers	8 (13.1)	
Visual disturbances	6 (9.9)	
Obstruction (auditory canal, airway)	5 (8.2)	
Bleeding (along with ulcers)	5 (8.2)	
Infections (along with ulcers)	3 (4.9)	

Table 2 shows the results of the descriptive analysis of the extracted data. Infantile hemangioma type (39; 63.9%) has a higher number than congenital hemangioma (22; 36.1%). Histopathological examination was only performed in 45 of the 61 hemangioma patients (73.8%). Based on the results of the histopathological examination, it was found that 32 or 52.5% of the

samples had results that supported the initial diagnosis of hemangioma, while the remaining 13 samples (21.3%) had results that were inconsistent with the initial diagnosis of hemangioma.

The data showed that the location of the most hemangiomas was in the facial area, as many as 36 (59%), followed by the extremities as much as 14 (23%), the head of the hale 6 (9.8%), the torso 4 (6.6%), and the perineum 1. (1.6%). The number of hemangioma lesions in the patient was dominated by solitary lesions, namely 51 (83.6%) compared to 10 (16.4%) multiple lesions.

Hemangioma lesion size data has an abnormal distribution, so that it is described in median (min-max). The size of the hemangioma lesions in this study had a median value of 3 cm, with a minimum value of 0.5 cm and a maximum value of 10 cm.

The data showed that there were 18 hemangioma lesions that had complications (29.5%). There is one hemangioma lesion that has more than one complication. The most complications were ulcers (13.1%). The complications of these ulcers could then be retranslated into ulcers with bleeding by 8.2% and ulcers with infection by 4.9%. Other complications include obstruction, both in the form of obstruction of the auditory canal and airway, as well as visual disturbances, which amounted to 9.8% respectively.

Table 3. Characteristics of therapy management

Variable	n (%)
Management	
Operative	47 (77)
Non-operative	14 (23)

The majority of hemangioma patients underwent operative therapy management, namely 47 patients (77%) compared to non-operative management, namely 14 patients (23%).

Table 4. Characteristics of operative management in hemangiomas

Variable	n (%)	Median (min – max)
Hemangioma type		
Hemangioma Infantile	30 (63.8)	
Congenital Hemangioma	17 (36.2)	
Histopathology	45 (95.7)	
Hemangioma	32 (68.1)	
Non-hemangioma	13 (27.7)	
Hemangioma location		
Face	28 (59.6)	
Head neck	5 (10.6)	
Torso	2 (4.4)	
Extremities	11 (23.4)	
Perineum	1 (2.1)	
Number of Lesions		
Solitary	40 (85.1)	
Multiple	7 (14.9)	
Size (cm)		2 (1 - 8)
Complicated Lesions	18 (38.3)	
Ulcers	8 (17)	
Visual disturbances	6 (12.8)	
Obstruction (auditory canal, airway)	5 (10.6)	
Bleeding (along with ulcers)	5 (10.6)	
Infections (along with ulcers)	3 (6.4)	

All hemangioma patients who underwent operative therapy underwent excision, namely 47 (100%). Most of the excision hemangiomas were performed on the face which is an aesthetically sensitive area of 28 (59.6%). Hemangioma lesions that had complications were 18 patients (38.3%) of all patients who then underwent excision, with the most common complication being ulcers, as

many as 8 patients (17%), consisting of bleeding in 5 patients (10.3 %) and infection in 3 patients (6.4%).

Hemangioma patients who underwent non-operative management were 14 (23%), with the majority of patients being given systemic therapy in the form of propanolol by 11 (79%), and observation by 3 (21%).

Table 5. Characteristics of non-operative management in hemangiomas

Variable	N (%)	Median (min – max)
Hemangioma type		
Hemangioma Infantile	9 (64.3)	
Congenital Hemangioma	5 (35.7)	
Histopathology	0 (0)	
Hemangioma		
Non-hemangioma		
Hemangioma location		
Face	8 (57.1)	
Head neck	1 (7.1)	
Torso	2 (14.3)	
Extremities	3 (21.4)	
Perineum	0 (0)	
Number of Lesions		
Solitary	11 978.6)	
Multiple	3 (21.4)	
Size (cm)		4.7 (± 2.9)
Complicated Lesions	0 (0)	
Ulcers	0 (0)	
Visual disturbances	0 (0)	
Obstruction (auditory canal, airway)	0 (0)	
Bleeding (along with ulcers)	0 (0)	
Infections (along with ulcers)	0 (0)	

Figure 1. Clinical picture of hemangioma 1. From left to right, auricula picture pre-propranolol therapy, 4 months post therapy, and 6 months post therapy.

Figure 2. Clinical picture of hemangioma. From left to right, facial features pre-propranolol therapy, 2 months post therapy, 4 months post therapy, and 6 months post therapy

4. Discussion

Based on the results of this study, 61 medical record data were obtained which were then extracted and analyzed descriptively. The age of symptom onset in the subjects in this study was 2 weeks with a minimum age of 0 weeks and a maximum age of 8 weeks. This is consistent with

the theory of congenital and infantile hemangiomas where in congenital hemangiomas, the lesions can be found from birth or 0 weeks of age, whereas infantile hemangiomas develop at 2-8 weeks of age.[8]

The gender of hemangioma patients in this study was found to be higher in the female population of 55.7% than in the male population of 44.3%. This is consistent with the demographic and characteristic hemangioma studies conducted in China, where in that study, hemangioma patients in the Chinese race had a female to male patient ratio of 1.77: 1, while the ratio of hemangioma cases across all races was equal to 2,4: 1 which was also dominated by female patients.[7] A prospective 2014 study in San Diego also found the same thing, where the incidence of hemangiomas in women was higher, 55.2% vs 44.8%.[9] The study rates were higher. almost similar to the findings in this study. Another study on 43 children diagnosed with periocular infantile hemangioma in Minnesota in 1965-2004 also showed a higher incidence rate in female patients than in boys, namely 70% vs 30% .[10]

The type of hemangioma in this study showed that infantile hemangiomas (63.9%) were more common than congenital hemangiomas (36.1%). The prevalence of hemangioma incidence in Indonesia is not known with certainty because there are no studies examining the incidence of hemangiomas in Indonesia, however, based on a prospective study of 549 newborns at Sharp Mary Birch Hospital, San Diego, California, 32 infantile hemangiomas and 2 congenital hemangiomas were identified from 29 infants, with 3 infants having multiple lesions. This study revealed a prevalence of infantile hemangioma incidence of 4.5% which is higher than congenital hemangioma which is only 0.3% .9 The results of this study support the findings of this study where there were more infantile hemangiomas than congenital hemangiomas due to the prevalence rate of hemangiomas. infantile in the general population having a higher rate of congenital hemangiomas.

Histopathological examination in this study was performed on 45 of the 61 hemangioma patients, while the remaining 16 were not subjected to histopathological examination. Based on the results of the histopathological examination, results were still found that were inconsistent with

the initial diagnosis. This means, as many as 28.9% of hemangioma diagnoses given to patients based on history and physical examination alone, had errors.

The location of hemangioma lesions in this study was dominated by the face, which was 59%. This finding is in line with a study in 1832 hemangiomas in China in 2011. The study found that as many as 926 (43.6%) locations of hemangiomas were on the face, followed by the head-neck, trunk, extremities, and perineum.[7] conducted in San Diego had results inconsistent with this study, where they found that the location of the most hemangiomas was on the torso by 53%, followed by the extremities by 35%, and then the head and neck by 12%.[9] The study was conducted on a Dutch population. also gave results that were not similar to this study, where the majority of hemangioma lesions were located on the trunk, namely 37% followed by head-neck area as much as 33%. In the head-neck area, 75% are found in the hair growth and frontal areas.[11]

The number of hemangioma lesions in one individual according to the descriptive analysis of this study was dominated by solitary lesions, namely 83.6%. This finding is in line with another study where only 0.6% of multifocal hemangioma lesions were present in the Chinese study population[7] and only 3 of 29 infants had multiple lesions in the San Diego study[9].

The size of the hemangioma lesions in this study population was 3 cm with a minimum size of 0.5 cm and a maximum of 10 cm. Hemangioma size in the Chinese study had a mean lesion size of 13 (± 15.4) cm^2.

The management of hemangioma therapy in this study was dominated by operative management, which was 77%, and the whole was in the form of excision, the number of hemangioma lesions found in the face and head neck and hemangiomas that were accompanied by complications in this study may also be one of the factors why the action was taken. surgery is widely performed in patients, considering that one indication of operative management is hemangioma located in a sensitive location and hemangioma accompanied by complications.[12]

The following are indications for surgical excision therapy in hemangioma patients: [12] hemangioma lesions fail to improve with local wound care and pharmacotherapy, hemangioma in certain locations involving sensitive aesthetic areas (lips, tip of nose, ears and eyelids), hemangioma with ulceration which can cause bleeding and infection, hemangiomas that obstruct

or deform vital structures (airway or orbit), the lesion is well localized and surgery can improve future reconstructive efforts (Hemangioma of ear or eyelid), the likelihood of future resection is high and scar is estimated to be similar, there is a psychosocial effect in the child on deformity due to hemangioma even though the esthetic and / or functional results are less favorable than spontaneous involution. In a study conducted in Nigeria at the surgical department of the University of Benin Teaching Hospital from 2004-2009, only 5 out of 63 children with hemangiomas underwent non-operative therapy, namely only 7.9%, in fact, 1 in 5 children with hemangiomas did not. undergoes spontaneous resolution and ultimately requires operative therapy.[13]

Management of non-operative therapy in this study was 23% with 79% of therapy using medical propranolol, this is in accordance with the journal of plastic and reconstructive surgery issued by Szychta P et al. which has the title Treatment of infantile hemangiomas with propranolol: clinical guidelines that state clinicians are advised to use oral propranolol therapy as a first-line therapy in proliferative phase hemangiomas requiring systemic therapy[18,19]. The use of propanolol can also be done if there is an indication of excision but when it is excised it can use aesthetics and leave a large defect so that it is difficult to close the wound, combination therapy with surgical excision can also be done with the aim of accelerating size reduction so that it is easier to perform surgery.

5. Conclusion

Hemangioma cases are more common in female patients than in men. Histopathological examination was not performed in all hemangioma cases and there were 21.3% histopathological results that did not match the diagnosis of hemangioma. The location of the lesions is predominantly on the face area with the majority of the lesions being solitary. Nearly one third of hemangioma lesions have complications with the biggest complication being ulcers. The treatment management that is the choice is dominated by operative management with excision techniques. The choice of operative management may be related to the number of hemangioma lesions in sensitive locations and complicated hemangioma lesions.

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