Chromoblastomycosis Case Study at Aceh Province Referral Hospital: Study in 8 Cases for 7 Years

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Abstract : Chromoblastomycosis is a chronic fungal infection that occurs in the skin and subcutaneous tissue caused by dematiaceous fungi. This study uses a case study approach obtained from medical record data of patients in the pathology anatomy laboratory of Dr. Zainoel Abidin Hospital, Aceh Province within 7 years (2012-2018). Information was obtained that reported cases of chromoblastomycosis tend to increase, especially in the last 2 years (2017-May 2018). During 2013 to 2015 there were no cases of chromoblastomycosis. The dominant patients in the age group above 50 years (62.50%) and the age group 0-10 years as much as 25.00%. The number of male and female chromoblastomycosis sufferers is the same. Localization of dominant lesions (50.00%) is found in the lower limbs (extremities). Specimens were received from the Surgery Department (62.50%) and the Department Dermatology and Venereology (37.50%). The cases obtained were predominantly given a clinical diagnosis as malignant tumors. Initial suspicion and appropriate laboratory diagnosis will assist in initiation of therapy in the early stages and specific isolation of the etiology of the agent can help prevent latent complications.

1. INTRODUCTION

Chromoblastomycosis is a chronic fungal infection that occurs in the skin and subcutaneous tissue caused by dematiaceous fungi (Mukesh et al, 2012). Usually the infecting fungi are Fonsecaea Pedrosoi, Cladophialophora carrionii and Phialophora verrusoca (Pawel et al, 2014) (Padmanaban et al, 2016). The prevalence of this disease is reported from humid and tropical subtropics, one of which is Asia (Agarwal et al, 2017) (Bobba, 2014). Men are often experience chromoblastomycosis disease than women (Mariani et al, 2015).

Dermal lesions can be shaped like small nodules until a large eruption resembling a papilla. Clinical features that often appear in the area of the neck, legs, lower limbs, face and arms. In the early stages can appear papules, such as warts then enlarge to form hypertrophic plaques. In the lesions also appear plaque with a flat surface and grow slowly in the middle and then after a few years, the lesions can be thickened to 3cm. The nature of Chromoblastomycosis lesions is polymorphic and must be distinguished from several clinical conditions (Queiroz et al, 2009).

Diagnosis that can be done is by observing muriform cells in tissue and isolation and identification of causative agents (Murthy, 2011). The success of healing is influenced by the causative agent, the clinical form and the severity experienced by the patient. In general, patients who experience chromobalstomycosis are treated with itraconazole, terbinafine or a combination of both. It is important to evaluate individual resistance to drugs. The treatment process requires the direction of clinical criteria, mycology and histopathology (Queiroz et al, 2009). The following in this study will be reported cases of chromoblastomycosis at the Anatomy Pathology Laboratory of the Hospital Public Service Agency Dr. Zainoel Abidin Aceh Province.

2. METHOD

This study uses medical record data at the Anatomy Pathology Laboratory of the Hospital of the Dr. Zainoel Abidin Hospital, Aceh Province within 6

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years (2012-2018). Descriptive data analysis by describing cases then discussed. The data displayed includes examination year, age group, gender, specimen sender department, clinical diagnosis established and microscopic examination results.

3. CASE REPORT

Based on medical record data, the patient's reference to the Anatomical Pathology Laboratory of the Hospital Public Service Agency Dr. Zainoel Abidin Aceh Province, found as many as 8 cases after the examination was made diagnosis with Chromoblastomycosis within 6 years (2012-2018), as follows:

3.1 Case 1

Specimens from a male with an initial Ih 83 years old were examined on May 3, 2012. Specimens were sent from Department Dermatology and Venereology. Localization of complaints is in the Dorsum pedis section with a differential diagnosis of Chromoblastomycosis and eumycetoma.

3.2 Case 2

Specimens from a man with the initials Nc aged 67 years were examined on August 3, 2016. The specimen was sent from the surgical department, with a clinical diagnosis of a tumor os femur malignant suspect.

3.3 Case 3

Specimens from a woman with an initial NFR of 9 years of age were examined on March 13, 2017. Specimens were sent from the department of Dermatology and Venereology. Localization of complaints was in the part of the left arm with a diagnosis of differential deep mycosis, Bacterielag infection and TB cutis.

3.4 Case 4

Specimens from a woman with the initials Br 67 years old, were examined on August 7, 2017. Specimens were sent from the surgical department. Localization of complaints in the anterior thoracic section with clinical diagnosis established is anterior thoracic papilloma.

3.5 Case 5

Specimens from a man with the initials Sm, 55 years old, were examined on November 14, 2017. Specimens were sent from the surgical department. Localization of complaints is at the side of the left pedis with a clinical diagnosis established is a malignant suspected skin tumor.

3.6 Case 6

Specimens from a woman with an initial Hm, 89 years old, were examined on February 9, 2018. Specimens are sent from the Department Dermatology and Venereology. Complaint localization is in the cruris dextra with a differential diagnosis of Chromomycosis, TB cutis, Blastomycosis, Sporotricosis and Squamous cell carcinoma.

3.7 Case 7

Specimens from a man with initial Mh age 4 years old, examined on May 16, 2018. Specimens were sent from the surgical department, with a clinical diagnosis of abscess at colli regio.

3.8 Case 8

Specimens from a woman with the initials Lb aged 27 years, were examined on May 17, 2018. Specimens were sent from the surgical department, with a clinical diagnosis is a malignant occipital suspect tumor.

4. RESULT AND DISCUSSION

Based on the data collected, information was obtained that reported cases of chromoblastomycosis tend to increase, especially in the last 2 years (2017-May 2018). Throughout 2013 to 2015 there were no cases of chromoblastomycosis. These conditions conclude that the discovery of chromoblastomycosis cases tends to increase in the Anatomical Pathology Laboratory of the Hospital Public Service Agency Dr. Zainoel Abidin Hospital, Aceh Province.

The results of this study are in line with Agarwal's (2017) study which stated that there was an increase in the discovery of cases of chromoblastomycosis between 2011-2016. Throughout 1955-2016 found 169 cases of chromoblastomycosis in India, where in the period 2011-2015 found 81 cases. In addition, in 2016 until May there were 25 cases

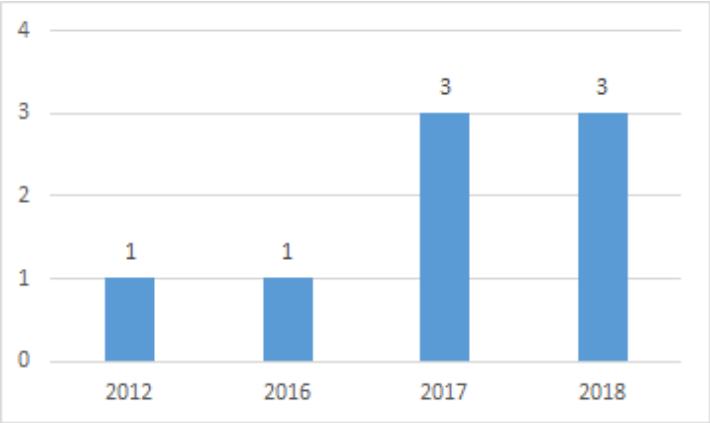

Figure 1. Distribution of specimen examinations of patients with a diagnosis of chromoblastomycosis at the Anatomical Pathology Laboratory of the Hospital Public Service Agency Dr. Zainoel Abidin Aceh Province in 2012-2018

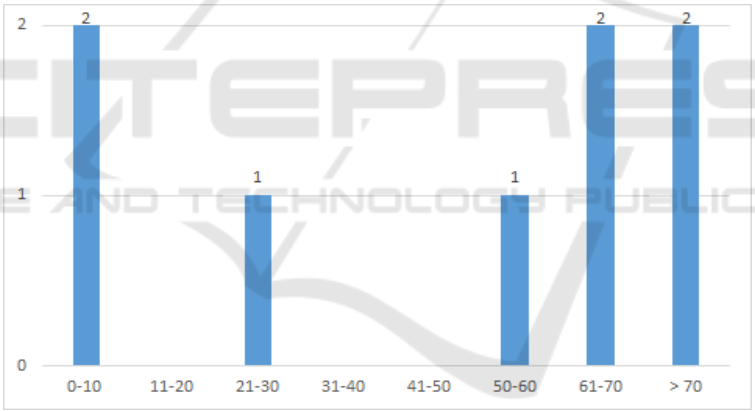

Figure 2. Distribution of age groups (in years) of patients with a diagnosis of chromoblastomycosis at the Anatomical Pathology Laboratory of the Hospital Public Service Agency Dr. Zainoel Abidin Aceh Province in 2012-2018.

Chromoblastomycosis patients are dominant in the age group above 50 years, as many as 5 cases (62.50%). The age group of 0-10 years is the age group where this case is found to be the second largest, namely as many as 2 cases or 25.00%. The information above shows that young age groups (children) and parents are the most common age group where chromoblastomycosis is found.

This phenomenon is not in line with Sarangi's research (2017) which states that chromoblastomycosis cases tend to be found more in the age range of 21-35 years (45.4%) than 11 cases. Research Agarwal (2017) also found that those who stated that chromoblastomycosis cases were more prevalent in the age range of 31-50 years (35%).

Based on gender, it was found that the number of male and female chromoblastomycosis sufferers was the same, where in each sex there were 4 cases (50.00%). This condition shows that in 8 cases that have been found there has not been a tendency for

this case to be dominant in one sex only. Localization of the dominant lesion (50.00%) was found in the lower limb (extremity) area, where 1 case (12.50%) was in the thigh section and 3 other cases in the pedis and cruris area (37.50%). The neck, back of the head, upper extremities and chest area were found in 1 case each.

Research conducted by Agarwal (2017) found that 81.10% of patients were men so they had a higher risk than women at 4.2: 1. The study conducted by Sarangi (2017) also found that men were more predominantly suffering from this disease with a risk of 1.4: 1 compared to women. Based on research conducted by Pawel et al (2014) states that infection can occur in all parts of the body. The legs and shin are the dominant parts of the body. This is in line with the results obtained in this study that found dominant lesions in the lower limbs (inferior extremities).

Specimens received by the Anatomical Pathology Laboratory of the Hospital Public Service Agency Dr. Zainoel Abidin, the dominant province of Aceh, came from the Surgical Section with 5 cases (62.50%). Three other cases (37.50%) were sent from the Dermatology and Venereology. Clinical diagnosis sent from the Department of Dermatology and Venereology is clinically diagnosed with chromoblastomycosis or cases of deep mycosis. Cases obtained from the dominant surgical department were given a clinical diagnosis with malignant tumors (4 malignancies) (80.00%) and 1 case (20.00%) were abscesses.

The term 'chromoblastomycosis' is exclusively used for typical fungal lesions resulting in 'sclerotic' bodies caused by dematiaceous fungi in the 'phaeohyphomycosis' group. The agents that cause this disease are Fonsecea, Cladosporium, and Rhinocladiella species. Most cases are limited to localized disorders of the skin and subcutaneous tissue. Initial suspicion and appropriate laboratory diagnosis will assist in initiation of therapy in the early stages and specific isolation of the etiology of the agent can help prevent latent complications (Chavan SS and Reddy P, 2013).

The histopathological features are described below:

Case 1

Microscopic examination results showed that preparations of tissue without epithelial lining were seen in groups of glandular structures of round oval shape with cuboidal epithelial linings, basophil spherical nuclei, fine chromatin, cytoplasmaeosinophilyl. The stroma consists of collagen connective tissue, as it appears multinucleated giant cells and lymphocyte cells. There is no sign of malignancy in the preparation, so it can be concluded to support a chromoblastomycosis.

Case 2

Based on the results of microscopic examination performed, tissue preparations with layered sterile epithelial linings with hyperkeratosis, acantosis, hypergranulosis, intact basal membrane appear. Intra epithelium appears pseudohorncyst. The sub epithelium consists of fibromycsoid connective tissue with a lymphocyte cell, multinucleated giant cell, PMN cells, neutrophils and a golden brown pigment. There is no sign of malignancy in this preparation, so it can be concluded that chromoblastomycosis.

Case 3

Based on the results of microscopic examination carried out, it was found that tissue preparations from specimen 3 with epithelial linings lay flat within normal limits. Sub epithelials appear granulomatous-granulomatous consisting of epithelioid cells, histiocytes and multinucleated giant cells between fibromycsoid connective tissue. In some places a brownish pigment appears. There is no sign of malignancy in this preparation, it can be concluded as chromoblastomycosis.

Case 4

Based on the results of microscopic examination, tissue preparations with layered epithelial lining, sub epithelial appearance, granulomatous features consisting of epitheloid cells, multinucleated giant cells, lymphocytes and a brownish pigment between fibromycsoid connective tissue were seen. There is no sign of malignancy in the preparation, it can be concluded a chromoblastomycosis.

Case 5

Based on the results of microscopic examination performed, tissue preparations with layered sterile epithelial linings that experience hyperkeratosis are obtained. Sub epithelials appear to group lymphocytic inflammatory cells, epithelial cells and multinucleated giant cells accompanied by copper bodies; between fibromycsoid connective tissue.

There is no sign of malignancy in this preparation. So that can be concluded is chromoblastomycosis.

Case 6

Based on the results of microscopic examination carried out, obtained tissue preparations with epithelial coating layered within normal limits. The local sub epithelial cells appear lymphocytic inflammatory cells, epithelioid cells and brownish pigments between fibromycsoid tissues. There is no sign of malignancy in the preparation, it can be concluded to support chromoblastomycosis.

Case 7

Based on the results of microscopic examination carried out, obtained tissue preparations with sub epithelial layered epithelial coating, fibromycsoid tissue with an inflammatory cell PMN, neutrophils and lymphocytes appear. In some places epitheloid cells, multinucleated giant cells and copper bodies are seen. There is no sign of malignancy in the preparation, it can be concluded as chromoblastomycosis with secondary infection.

Case 8

Based on the results of microscopic examination carried out, obtained tissue preparations with epithelial coating layered within normal limits. The sub epithelial consists of fibromycsoid tissue with the distribution of inflammatory cells of PMN, neutrophils and lymphocytes. Found groups of epithelioid and multinucleated giant cell and copper bodies. There is no sign of malignancy, so it can be concluded as chromoblastomycosis.

Many cases are not diagnosed cytologically because of a lack of clinical suspicion that is undiagnosed. In the preparation often found mixed inflammatory cells and scattered fungal sclerotic bodies. The sclerotic bodies look orange to reddish brown round to polyhedral, about the size of red cells (approximately 5-8 mm), show mature thick wall (just like outer border of copper penny), and characteristic intracellular septations (Chavan SS and Reddy P , 2013).

Histopathologic examination with hematoxylin eosin (HE) staining on chromoblastomycosis will show inflammatory granuloma in the form of pseudoepiteliomatous epidermal hyperplasia with parakeratosis, spongiosis, and extensive dermal infiltrate consisting of numerous epithelioid histiocytes. Another component of infiltrates is the presence of multinucleated giant cells in which there are sclerotic bodies, neutrophils, lymphocytes, plasma cells, and eosinophils.

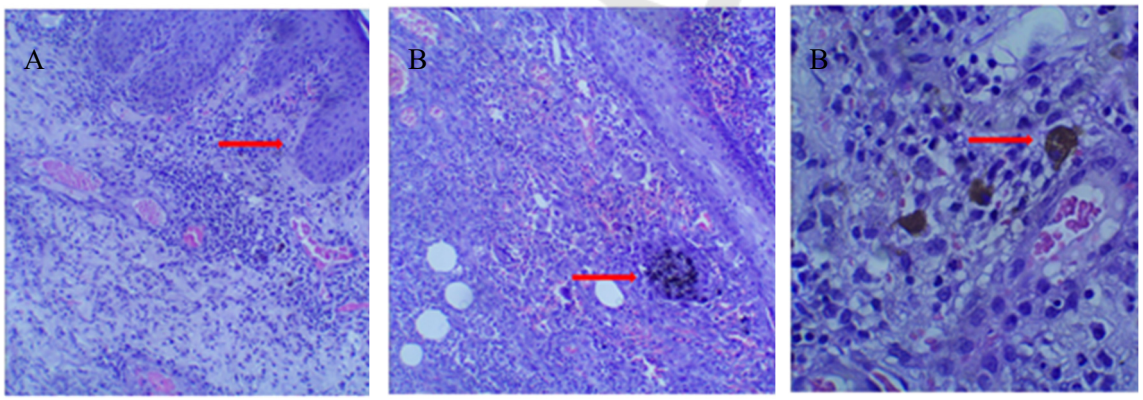

Figure 3. Histopathological features of specimen examination of patients with a diagnosis of chromoblastomycosis at the Anatomical Pathology Laboratory of the Hospital Public Service Agency Dr. Zainoel Abidin Hospital, Aceh Province in 2012-2018 (A) pseudoepitheliomatous hyperplasia of per capplasia (B) Pigmented sclerotic bodies (Medlar bodies or Copper bodies)

Fungal species that cause chromoblastomycosis cannot be distinguished from histopathological examination so that identification of tissue culture is needed. Macroscopically, the results of tissue culture from fungi generally give a similar picture, namely blackish colonies. Microscopic identification of culture depends on the presence of different types of sporulation. Accurate differentiation of various fungi is difficult to do (Mariani et al, 2015).

5. CONCLUSION

Based on medical record data of patients at the Anatomy Pathology Laboratory of Dr. Zainoel Abidin, Nanggroe Aceh Province, has 8 cases of chromoblastomycosis throughout 2012-2018. Chromoblastomycosis cases tend to increase in the last 2 years (2016-2018). Most sufferers in the elderly and young with localization of dominant lesions in the extremities. Gender there is no difference in this case study. Specimens received predominantly from the Surgery and Dermatology and Venereology Department. Clinical diagnosis of dominant malignant tumors (malignancy). Initial suspicion and appropriate laboratory diagnosis will assist in initiation of therapy in the early stages and specific isolation of the etiology of the agent can help prevent latent complications.

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