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A Rare Case of Erythema Induratum of Bazin

Herkamela[1], Ariani T[2]

[1]Andalas University, Medical Faculty, Department of Dermatovenereology / Dr M. Djamil Hospital, PerintisKemerdekaan, Padang, West Sumatra 25171, Indonesia
herkamela0909[at]gmail.com

[2]Andalas University, Medical Faculty, Department of Dermatovenereology / Dr M. Djamil Hospital, PerintisKemerdekaan, Padang, West Sumatra 25171, Indonesia
tutty_masri[at]yahoo.com

Abstract: ***Background: Erythema induratum of bazin (EIB) is a tuberculid type of skin tuberculosis that characterized with chronic reccurent nodular eruption and ulcerative lesions on lower legs, commonly in middle aged woman and well nourished women. This is a lobular paniculitis with vasculitis. Erythema induratum of bazin is a rare case. This is the first case reported in Dermatology and Venereology Department of Dr. M Djamil Padang hospital for the last 3 years from 2016 to 2019. Case: A women, 52 years old was consulted from surgery department with chief complaint bumps of reddish to blackness that feels pain in both lower limbs which is more increasing since about 3 weeks ago. Patient has complained reccurent ulcer and bumps in both lower limbs since 10 years ago and complaints keep reappear until now. Patient has no history of tuberculosis (TB) and works as a TB social worker. Patient is a well nourished women. From dermatology state, there were multiple erythematous nodules and plaques, ulcers that covered with blackish crusts, and atrophic scars. From laboratory finding, there were anemia, hypoalbuminemia and high erythrocyte sedimentation rate. The result of chest x-ray is within normal limit. Histopathological examination revealed lobular panniculitis, fat necrosis and vasculitis. Patient received regiment from pulmonology department antituberculosis drug category I in 6 month. Discussion: Erythema induratum of bazin are considered as a rare case and has a challenge in diagnose. The diagnosis is established history and clinical appearance, supported with histopathological examination.***

Keywords: Erythema induratum of bazin, panniculitis, tuberculosis, anti tuberculous drugs

1. Introduction

Erythema induratum of bazin (EIB) is a hypersensitivity reaction to Mycobacterium tuberculosis infection. The diagnosis can be difficult because tubercle bacilli are usually not found in smears or cultures of lesions. 1EIB was first described by Ernest Bazin in 1861 and characterized by recurrent, painful nodules or plaques on the calves of the lower legs.2EIB is a tuberculid showing lobular panniculitis classified under cutaneous tuberculosis.[1]

The pathogenesis of EIB remains poorly understood and its relation to tuberculosis is still controversial. Most authors currently consider EIB a multifactorial disorder with many different causes, tuberculosis being one of them, which was thought to be a hypersensitive immune response to M. tuberculosis. Multidrug antituberculosis therapy is helpful in the latter situation. [2]

The diagnosis of EIB is made on the basis of the characteristic clinical morphology, a positive tuberculin test and circumstantial evidence of TB elsewhere in the body, supplemented by histopathologic findings. Detection of Mycobacterium tuberculosis (MTB) deoxyribonucleic acid (DNA) by polymerase chain reaction (PCR) on the biopsy specimen further supports the diagnosis. However failure to detect MTB by PCR does not exclude the diagnosis of EIB. A positive MTB DNA recovery by PCRof EIB biopsy specimen varies from 25% to 77%. Many a times diagnosis can be confirmed by a good response to antituberculous treatment.[1]The histopathology of EIB consisted of granulomas containing Langerhans giant cells and focal areas of fat necrosis at the dermis and subcutaneous adipose tissues.[2]

2. Case Report

Women patient, 52 years old, was consulted from the surgery department of RSUP Dr. M. Djamil Padang on January 23th, 2020 with chief complaint there were painful reddish-blackish bumps in both lower limbs which increased in number and size since 3 weeks ago. Patient has complained reccurent ulcer and bumps in both lower limbs since 10 years ago and complaints keep reappear until now. Patient works as a TB social worker.

Physical examination was in normal limit. From dermatology state, there was hyperpigmented macula, hyperpigmented plaques, athropy scar, white rough scale, erythematous nodes, blackish red crust on both lower leg. The result from the laboratory finding anemia, high erythrocyte sedimentation rate (ESR), hypoalbuminemia. The result from the supporting examination was pus culture result *staphylococcus aureus*, chest X-ray result cor and pulmo within normal limit, result of rapid sputum test is MTB not detected, and from histopathologicalpicture in the fibrocolagenstroma to the sub epidermis (fat tissue) it appears as a grouping and grouping of lymphocyte cells, plasma cells and some datialanghans cells, in other pieces, there is necrotic tissue containing a solid form of PMN leukocyte cells and cellular debris is suitable for a Eritema Induratum of Bazin. Based on the all result examination we made diagnosis with erythema induratum of bazin. The patient was consult to pulmonology department and the result was TB Cutis and they give a treatment antituberculosis drug (category 1) in 6 month.

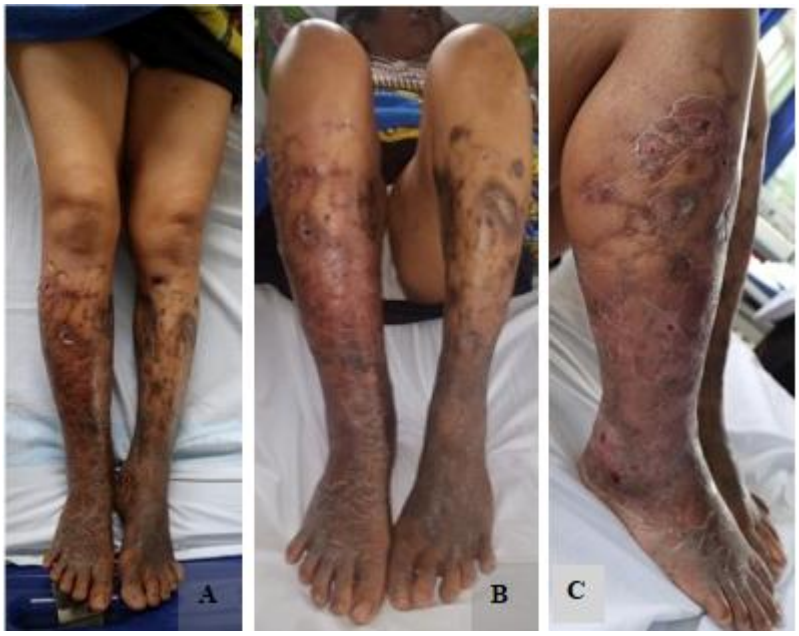

Figure A, B, C: There was hyperpigmented macula, hyperpigmented plaques, athropy scar, white rough scale, erythematous nodes, blackish red crust on both lower leg

3. Discussion

In this case, a women patient, 52 years old, was consulted from the surgery department of RSUP Dr. M. Djamil Padang with chief complaint small lumps appeared on both lower limbs which gradually turned into ulcers and after drying they left a blackened scar accompanied by increasing pain and more pain since 3 weeks ago. Physical examination results in these patients are within normal limits and nutritional status is good according to the literature saying that EIB can attack healthy women.[1]From the results of laboratory tests found anemia, hypoalbumin and elevated ESR. Patients underwent chest X-ray examination and sputum examination even though there was no history of long-standing cough, long-standing fever, and family or close friend history of tuberculosis. The patient has never had a BCG vaccination. This is consistent with the literature which says EIB often occurs in women, is chronic residif, and often affects the lower limbs.[8] This case is very rare because from several reports such as in Brazil it is said that Tuberculosis occurred worldwide and in 2014 there were 9.6 million cases and 1.4 million deaths. In Brazil, the incidence of tuberculosis was 36.7 cases / year per 100,000 inhabitants and the mortality rate was 2.4 cases / year per 100,000 inhabitants.[9]Tuberculids occur in less than 1% of TB patients, being more common in women.EIB is rare, even in endemic countries. We performed a retrospective study of EIB patients followed in the University of Sao Paulo, Brazil, from 2004 to 2014 just found 54 patient with EIB and only one patient presented active TB at time of diagnosis. Six patients had been treated for TB before presenting EIB.[3]In Indonesia, 1 case of EIB was reported in pulmonary TB patients in Surabaya in women aged 24 years. Patients treated with OAT for 6 months and complaints healed. At the Dr. M. Djamil Padang is the first case of EIB in the 2016-2019 period.

Pathogenesis of erythema induratum is not completely understood.[10]Erythema induratum of bazin is a mostly lobular panniculitis currently, the term ‘‘nodular vasculitis’’ (NV) is often used as a synonym, although historically they were considered different entities. EIB has been regarded as a manifestation of tuberculin hypersensitivity (ie, a type of tuberculid occurring on the legs),whereas NV would represent the nontuberculous counterpart.[11]Although EIB was frequently associated with *Mycobacterium Tuberculosis (*MTB), the etiology was controversial because organism are not always identified in the biopsied and tissue cultures. With the advent pf polymerase chain reaction (PCR) techniques, multiple culture negative cases were shown to contain MTB DNA.Pathogenesis EIB is considered to be a hypersensitivity disorder mediated by immune complexed or cell mediated a type IV hypersensitivity reaction.[7]The causal relationship between EIB and TB has been based on a few circumstantial pieces of evidence in some patients, such as (1) a high degree of hypersensitivity to tuberculin skin testing in most patients,(2) a frequent personal or family history of TB (the percentage of EIB patients with chest radiographic findings that suggest TB varies from 2% to 65%), (3) presence of an active TB foci, (4) occasional coexistence with other tuber- culids, such as papulonecrotictuberculids or lichen scrofulosum, in the same patient,and (5) response to antituberculous treatment.[11]

The diagnosis of EIB is based on anamnesis, clinical features, histopathological examination, chest radiograph, and sputum examination. From the results of histopathological examination, laboratory tests obtained high ESR which have the meaning of infection in patients, chest X-ray results and sputum examination obtained are normal limit. In this patient, it was consulted to the pulmo department for the Mantoux test but they was said that the reagents for adults were absent. When first seeing the patient's clinical course, many differential diagnoses in these patients such as erythema nodosum, cutaneous polyarteritis, lipodermatosclerosis and pancreatic panniculitis. In this patient the differential diagnosis can be removed one by one from the history, physical examination, and supportive examination. Based on the literature it is said that erythema

nodusum is acute onset, lesions are no ulcers, if cured there is no atrophic scars, and usually there are complaints of fever, weakness, joint pain, headaches and others.[7]In lipodermatosclerosis, the onset is usually acute, lesions can be found in the chest and abdomen, often unilateral, rarely only 13% are ulcers. In pancreatic paniculitis, it occurs because there is a disruption in the function of the pancreas, and will heal if pancreatic disease improves, usually occurs in the lower legs and most often occurs in the ancle and knee. Cutaneous polyarteritisnodosa (cPAN) is a vasculitis of medium-sized arteries in thedermis and subcutaneous tissues. Etiology is currently unknown, although it may be immune complex mediated and has been linked to various infections, drugs, and autoimmune diseases. Dermatologic abnormalities are common at presentation and may include nodules, ulcers, livedoreticularis, or purpura, and unilateral.[13]

Dermatological examination found erythematous nodules and plaque that felt painful on palpation, well-demarcated, multiple, in the middle there are round and oval ulcers covered with black crust, and in some places that experience healing found the presence of hyperpigmentation plaques and atrophic scars. The appearance of skin lesions on EIB resembles erythema nodosum (EN), but skin lesions on EN are characterized by painful nodules, are indurated, without ulceration, and disappear spontaneously within 8 weeks, so healing is not accompanied by atrophic scars. Atrophic scars in EIB are a distinctive sign that distinguishes from EN.[14]

Histopathological examination in this case showed the results appeared lobular panniculitis and vasculitis. In other pieces, there is a necrotic tissue containing a solid form of PMN leukocyte cells and cellular debris and this picture is in accordance with erythema induratum of bazin. Histopathological findings in this patient are in accordance with the literature which says that erythema induratum of bazin is lobular paniculitis.[15]Histopathological examination very important in establishing the diagnosis of EIB and also to rule out diagnosis. The histopathology analysis must find three out of four elements: lobular panniculitis, fat necrosis, vasculitis, and granuloma and poorly visualized acid fast bacilli.[9]

Management in these patients is in accordance with the category I anti tuberculosis drug regimen, with anti tuberculosis drug regimen, with rifampicin 600 mg / day, isoniazide 300 mg / day, pyrazinamide 1500 mg / day, and ethambutol 1000 mg / day given for 2 months, followed by 600 mg rifampicin / day and isoniazid 300 mg / day for the next 4 months. Patients are advised to control pulmonary department every 1 week and control to Dermatology and Venereology polyclinic for the treatment of wound biopsy.

The course of the EIB disease can be repeated and chronic even can last for decades. For the prognosis in this patient, quo ad vitam is bonam because the disease is not life threatening, quo ad sanam is dubia ad night because this disease is chronic and can be recurrent, quo ad cosmeticum is dubia ad night because in this disease leaving scar, and quo ad functionam is dubia ad bonam.

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Author Profile

Herkamela is a resident of dermatology and venereology, Medical Faculty, Andalas University.

Tutty Ariani received the Dermatologist degrees in Medical Faculty, Andalas University. She now with Dr. M. Djamil Hospital, Padang, West Sumatera, Indonesia as a Head of Infection Dermatology Division now with Dr M Djamil Hospital, Padang, West Sumatera