

Giant Abscess On Serve Leprosy Reaction With Prolong Used Of Steroid

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Abstract: Leprosy patients during the course of their illness may experience the leprosy reactions, the body's immune response against *Mycobacterium leprae*. Long-term use of steroids for treatment may decrease the body's immune system against *Mycobacterium leprae*. As severe leprosy reactions, giant abscess incidence is rare and has a high morbidity and mortality. Therefore, it needs a comprehensive multidisciplinary management such multiple incision and drainage, proper pharmacologic treatment for leprosy reactions as underlying disease that involves the patient's systemic condition.

Patient and Method: We report one case of giant abscess in bucal, left upper and lower extremities in leprosy patients who had been taking steroids for 1.5 years due to neuritis (Paucibacillary leprosy reaction type) but the leprosy reactions became more severe and the patient's condition deteriorated. We performed multiple incision through subcutaneous and fascia to expose each compartments of muscle and drainage to remove pus.

Result: There were 2,500 cc of pus in the left femoral region and 200 cc in the left antebachial region. The culture was negative, showing that the giant abscess was not caused by bacterial infection, but a severe leprosy reactions. Systemic complications due to leprosy reactions, the longterm use of steroids and hypoalbuminemia prevent wound healing and patient's recovery.

Summary: Long-term use of steroids in leprosy may weaken the immune system and cause a giant abscess. Therefore we need a comprehensive management of multiple surgical incision and drainage as well as medical treatment and proper nutritional support.

Keywords: *Giant abscess, leprosy reaction, steroid, multiple incision.*

Abstrak: Penderita kusta selama perjalanan penyakitnya dapat mengalami reaksi kusta yang merupakan respon imun tubuh terhadap kuman *Mycobacterium leprae*. Penggunaan steroid jangka panjang untuk pengobatannya dapat menurunkan sistem imun tubuh terhadap *Mycobacterium leprae*. *Giant abscess* merupakan salah satu reaksi kusta berat yang jarang terjadi dan memiliki morbiditas dan mortalitas yang tinggi. Oleh karena itu dibutuhkan penatalaksanaan multidisiplin secara komprehensif berupa tindakan insisi menembus subkutis dan fascia sehingga dapat mencapai beberapa kompartemen otot dan drainase serta farmakoterapi untuk reaksi kusta dengan tepat dan benar sebagai penyakit dasar yang melibatkan kondisi sistemik pasien.

Metodologi: Kami melaporkan 1 kasus *giant abscess* di pipi, ekstremitas kiri atas dan bawah pada pasien kusta yang mengkonsumsi steroid selama 1,5 tahun dikarenakan reaksi kusta tipe PB berupa neuritis. Selama penggunaan steroid, reaksi kusta menjadi semakin berat dan kondisi pasien memburuk. Kami melakukan beberapa insisi menembus subkutan dan fascia serta drainase untuk mengeluarkan pus dan melakukan pengobatan medis serta dukungan nutrisi.

Hasil: Ditemukan pus sebanyak 2500 cc pada regio femoralis sinistra dan 200 cc pada regio antebachii sinistra. Hasil kultur pus negatif, menunjukkan bahwa *giant abscess* tidak disebabkan oleh infeksi bakteri, melainkan oleh suatu reaksi kusta berat. Komplikasi sistemik akibat reaksi kusta, penggunaan steroid dan hypoalbumin merupakan faktor penyulit dalam penyembuhan luka dan pasien secara menyeluruh.

Kesimpulan: Penggunaan steroid jangka panjang pada neuritis akibat reaksi kusta dapat melemahkan sistem imun dan menimbulkan *giant abscess*. Oleh karena itu diperlukan penatalaksanaan komprehensif berupa beberapa tindakan insisi menembus subkutan dan fascia untuk membuka kompartemen otot dan drainase serta pengobatan medik dan dukungan nutrisi yang tepat.

Kata Kunci : *Giant abscess, leprosy reaction, steroid, multiple incision*

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Leprosy or Morbus Hansen is a chronic infectious disease caused by mycobacterium leprae that affects the skin, nerves and the respiratory tract mucosa. The disease probably originated in Egypt and other Middle Eastern countries as early as 2400 BCE. The prevalence of leprosy in developing countries is still high. According to WHO data in 2006, the number of leprosy patients in Indonesia was as many as 22175. WHO reported prevalence in Indonesia was 5 times higher than the global prevalence.^{1,2}

Patients were divided into two groups for therapeutic purposes: paucibacillary (Tuberculoid, Borederline Tuberculoid) and multibacillary (midborderline BB, Borderline lepromatous, Lepromatous Leprosy). The classification is based on the number of skin lesions, less than or equal to five for paucibacillary (PB) and greater than five for the multibacillary (MB) form.³ Leprosy patients during the course of their illness may experience the leprosy reaction, the body's immune response against Mycobacterium leprae. There are two types of leprosy reaction i.e reversal reaction (RR) and erythema nodosum leprosum (ENL). RR is a delayed-type hypersensitivity reactions. This reaction usually occurs in the first 6 months of treatment. The characteristic of RR is existing lesions become active and new lesions arise. Neuritis may also appear in this type because phagocytic cells develop into macrophages and granulomas form in the nerve sheath.^{4,5,6}

Type 2 lepra reactions (erythema nodosum leprosum- ENL), are associated with circulation and tissue deposition of immune complexes. They resulted from antibody response or immune complex response to M. leprae antigenic determinants which occur only in multibacillary leprosy. Circulating immune complexes in the circulation affect various organs (kidney, liver, bone marrow, lymph). The clinical conditions are fever, polyarthralgia, lymphadenopathy, glomerulonephritis, hepatitis, etc.^{5,6,7}

Mycobacterium leprae has a predilection in the peripheral nerves in Schwann cells or unmyelinated axons, Schwann cell serves a

function as phagocytic cells and can develop into macrophages and form granulomas in the nerve sheath. Granulomas in nerve sheath will unite with each other to form a cold abscess. Coalescence of multiple cold abscess along predilection form giant abscess. Multiple incision through subcutaneous and fascia may open compartments of muscle and pus may be drained adequately. Aside from surgery treatment, proper medical treatment and nutritional support is required to treat leprosy reaction.^{5,7}

PATIENT AND METHOD

A 23-year-old male with a history of PB leprosy (negative smear) had been on rifampicin and ofloxacin for two years. Six months later, the patient had reversal reaction (neuritis) and was put on metilprednisolon for 1,5 years without proper follow-up. The leprosy reaction was resistant to steroid and becoming worse. Patient came to our emergency department with a chief complaint of swelling at buccal and left extremities (see figure 1,2 and3). Patient also had polyarthralgia, fever, tachycardia, hematuria, hypotrophic striae, moon face, polycyclic lesion, and purulent discharge. The laboratory result was anemia (8,9 g/dl), leukosytosis (34.700/mm³) hypoalbuminemia (0,8g/dl), hipoproteinemia (3,8g/dl), elevated SGOT/PT, electrolyte imbalance, and KOH (+). From X ray examination there was no sign of osteomyelitis. The diagnosis was giant abscess with leprosy reaction that has changed from RR to ENL. We performed multiple incision on the left femoral and antebachii region. At the left femoral region, the incision was performed through subcutaneous plane and fascia from anterior compartment to medial and posterior compartment. The length of incision was only 3 cm each as long as all compartments could be exposed and connected. At the left antebachii region, the incision was deepened through anterior middle and deep compartments. Drains were attached to evacuate pus from the extremities. The pus was taken for culture examination. Afterwards, we used honey as

We consulted dermatology and internal medicine department for comprehensive treatment of the systemic disease. The dermatology department did Ziehl Nielsen examination lesion and ear for calculating the number of mycobacterium leprae in this patient. The steroid was discontinued and the electrolyte imbalance was corrected. We gave high calorie and protein diet via parenteral route. The multi-drugs treatment for leprosy was continued and antifungal drug was given to treat the fungal secondary infection.

RESULT

There were 200 cc of pus from left arm and 2500 cc from left leg (see figure 4 and 5). The culture for aerob and anaerob bacteria was negative. From Ziehl Nielsen examination we found the number of mycobacterium leprae was +5, the type of leprosy was changed from Paucibaciler to Borderline Leprosy. We changed the dressing everyday with local honey. At day 40, the pus was minimal and the granulation tissue had grown well. Unfortunately, systemic complications due to severe leprosy reactions caused patient to fall in multiple organ failure. The patient died at day 68 of treatment.

DISCUSSION

Two years ago, patient had rifampisin and ofloxacin for paucibaciler leprosy treatment. Unfortunately, ofloxacin had induced the reversal reaction such as neuritis at upper and lower left extremities after six months of treatment.⁹ Patient took metilprednisolon for 1,5 years to reduce the reaction. The long term use of steroid caused the patient to have side effects such moon face, fungal infection, skin hypotrophy, reduced immune system and inhibited wound healing process.¹⁰

During the use of steroids, leprosy reactions became more severe and the patient's condition deteriorated. The leprosy reaction was changed from RR to ENL and the number of mycobacterium leprae increased to +5, the type of leprosy was changed from Paucibaciler to Borderline because of the decreased immune system.^{3,10} We performed

multiple incision and drainage through all compartments of infected extremities. It was not necessary to do fasciotomy along the compartment, the length of incision was only 3 cm each, as long as all compartments could be exposed and connected. We avoided further injury to the soft tissue because the patient's systemic conditions such as prolonged use of steroid, anemia, hypoalbuminemia, and severe leprosy reactions could interfere the healing process. There were drains attached to prevent accumulation of pus. The culture for aerob and anaerob bacteria was negative, showing that the giant abscess is not caused by bacterial infection, but by a severe leprosy reactions.⁹ Beside the wound care treatment, we did comprehensive management to treat the underlying disease and complicative condition such as correcting the electrolyte imbalance, giving high calorie and protein diet via parenteral route, continuing multi drugs treatment for leprosy and using fluconazole to treat the fungal secondary infection. During the treatment, the leprosy reaction was resistant to steroid. So we decided to discontinue the steroid therapy. The alternative drugs for that condition are thalidomide or clofazimide.⁵ Severe leprosy reaction has high morbidity and mortality. At day 68, systemic complications due to severe leprosy reactions caused patient to fall in multiple organ failure died although the wounds condition were improved.

SUMMARY

Long-term use of steroids in neuritis due to leprosy reactions can weaken the immune system and cause a giant abscess. Severe leprosy reaction has high morbidity and mortality. Therefore we need a comprehensive management of multiple surgical incision and drainage as well as medical treatment and proper nutritional support.

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Figure 1. Striae hypotrophy lesion at right and left shoulder; polycyclic lesion with active border at abdomen, inguinal and femoral region.



Figure 3. The left leg was swollen from proximal to distal extremities. The consistency was fluctuated, pain (+).



Figure 2. At antebrachii sinistra region (wrist and distal from fossa cubiti), there were necrotic ulcer with pus.



Figure 4. At antebrachii sinistra region, the necrotic tissue were debrided, the incision was deepened through anterior middle and deep compartments and there were 200 cc of pus drained.



Figure 5. At proximal femoris region, the incision was performed through subcutaneous and fascial plane from anterior compartment to medial and posterior compartment. There were two drains attached. The pus from this region was 2500 cc.

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