CLINICAL MANIFESTATION OF SYSTEMIC LUPUS ERYTHEMATOSUS MIMICKING TUBERCULOSIS IN A 4 YEAR-OLD CHILD

Nur Aisyah Wijaya, Ariyanto Harsono
Department of Pediatrics
Airlangga University School of Medicine
Dr Soetomo Teaching Hospital, Surabaya

ABSTRACT
A 4-year old girl was admitted to hospital with the main complaint of fever, cough, lost of appetite, and decreased body weight since 6 months. Physical examinations revealed anemic, firm and non tender multiple lymph node enlargements on cervical and axillary’s region with dimension of 1x1 cm. There were moist rales and wheezing on both lungs. The abdomen was distended; ascites and edema of extremities were found. Chest x-ray showed diffuse lung infiltrates, cardiothoracic ratio was 51 %. The sequence of events fulfilled the diagnosis of tuberculosis using the criteria of tuberculosis of Respirology Working-group unless otherwise Fine needle aspiration, PCR and acid-fast bacilli showed no tuberculosis. Further exploration showed fulfillment 6 out of ARA criteria of SLE. Treatment with methyl prednisolon and prednisone resulted in good improvement of symptoms.

Keywords: SLE, tuberculosis, prednisolon, prednisone

Correspondence: Nur Aisyah Wijaya, Department of Pediatrics, Airlangga University School of Medicine
Dr Soetomo Teaching Hospital, Jl Mayjen Mustopo 6-8, Surabaya, Phone 62-31-5501680

INTRODUCTION
Systemic Lupus Erythematosus (SLE) is an autoimmune disease, involving multiple organ systems with varying course that is often difficult to diagnose. The patient can present with various manifestations that mimics with others chronic diseases. Children most frequently present with prolonged fever, anorexia, weight loss, fatigue, and lymphadenopathy. SLE predominantly affects female puberty in the age more than 10 year and the onset before the age of 5 year is very rare. The diagnosis is confirmed by the combination of clinical and laboratory manifestations based on the criteria from American College of Rheumatology Classification Criteria for SLE. (Gitelman 2004; Lehman 2002; Niaudet 2004; Petri 2004).

Tuberculosis is common in young adult and children under 5 year of age. Seven center hospitals in Indonesia reported 1086 cases of tuberculosis in children with the age of 12-60 months during 1998-2002 (42.9% of all tuberculosis cases). The majority of children with tuberculosis infection develop no sign or symptoms at anytime. Occasionally, infection is marked by fever, cough, malaise, weight loss, and lymphadenopathy. Diagnosis of tuberculosis in children can be difficult. There are many criteria used for diagnosis such as scoring system from Respirology Working Group (Nastiti 2005). The purpose of this paper is to report clinical manifestation of lupus nephritis in a 4 year-old child with clinical features mimicking tuberculosis.

CASE REPORT
L, a 4 year-old girl with the body weight 10 kg was brought to Outpatient Unit Dr. Soetomo Hospital. A history given by her mother was as follows: she has been suffering from fever since approximately six months before admission. It was a fluctuating low-grade fever. She also suffered from cough since six months ago. The body weight decreased gradually because she had lost of appetite. Two months prior to admission, she got pain on the knee joint and could not walk normally. There was no history of trauma. Her grandfather has chronic cough. Histories of bronchial asthma or allergy were refused. The chest x-ray of her grandfather showed consolidation at the apex accompanied with emphysematous lung but acid-fast bacilli from sputum examination was not found. He was stayed together with the patient.

Clinical examination at that time found an alert child with stable vital sign. Nutrition status was moderate malnutrition. The child looked anemic, neither icteric, dyspnea nor cyanotic were found. Firm and non-tender multiple lymph-node enlargements on cervical and axillary’s region were detected with dimension of 1x1 cm. Heart and lung examinations revealed normal.
Abdomen was normal, neither hepatomegaly nor splenomegaly was found. Swelling on both of knee joint was detected. BCG scar was present on her right arm. Laboratory examination at the time revealed hemoglobin 8.9 g/dL, leukocyte 3900/mm³, platelets was normal, differential count -/-/2/48/50/- and ESR 45 mm/hour. Mantoux test 0x0 mm. Chest x-ray showed parahilar lymph node enlargement and infiltrates at the bases.

The x-ray examinations of knee and pelvic joints revealed normal. Based on clinical examination, laboratory finding and scoring system from Respirology Working Group, the child was diagnosed as pulmonary tuberculosis. The treatments were rifampicin, isoniazide, pyridoxine, and pirazinamide. The patient was suggested for follow up in one month later. Three weeks later, she came to emergency hospital with the complaint of swollen on the eyelids and feet since about one week ago. She had no sign of jaundice or bleeding tendency. Her passing urine was normal. According to her mother the child also got shortness of breath since three days prior to admission and getting worse since the previous day. Fever and joint pain still persisted. The child was delivered spontaneously at term by healthy mother. The birth weight was 3200 gram. She was breastfed until 2 years old. Her immunization was completed. There was no developmental delay. She could stand when she was 10 months old and able to walk by herself at 12 months old.

Physical examination showed an alert child with diffuse hair loss, body weight was 13 kg (the body weight was 10 kg three weeks prior to admission) and a body height 85 cm. The blood pressure was 90/60 mmHg, the pulse rate was 130 times/minute and the respiratory rate of 50 times/minute and the body temperature was 38°C. She looked weak, pale and dyspneic. Neither there was anemic but no cyanotic nor jaundice was observed. There was palpebral edema. Large jugular venous pulsations were not visualized. Multiple cervical and axillary's lymph node enlargement were found with measurement of 1x1 cm. The chest was symmetric, and there was sub costal retraction. The heart beat was rapid with heart rate 140 times per minute regularly, no murmur was heard. The breath sound in both lungs was vesicular. There was moist rales and wheezing. The abdomen was distended. Ascites was found. Neither liver nor spleen was palpable. The vertebrae were normal. There was edema observed on her extremities with capillary refill time less than 2 second. Swelling and ascites on second visit lead to exploration of the cause of Nephrotic Syndrome exploration including SLE.

Laboratory examinations revealed a hemoglobin level of 8.2 g/dL, leukocytes count was 8500/mm³, haematocrite was 30%, differential leukocyte count was -/-/1/46/53/-, ESR was 40 mm/hour and platelets count was 461000/mm³, retikulocyte was 17%, SI was 13.4 IU, TIBC was 201 IU and Fe/SI was 27%. Serum electrolyte showed sodium 137 mEq/dL, potassium 4.2 mEq/dL, calcium 8.5 mEq/dL; SGOT 26 IU, SGPT 16 IU, serum albumin 1.4 mg/dL; BUN 11.6 mg/dL; serum creatinin was 0.4 mg/dL; total cholesterol was 273 mg/dL. The urinary examination showed albumin +4, no erythrocyte was found, leukocyte was 1-2, epithelia was positive, granular cast was positive, crystal was negative, oval fat bodies was negative and no bacteria was found. ANA test serology was strong positive, rheumatoid factor was negative, C3 was less than 30, LE cell was negative, double stranded DNA was strong positive, CRP was

![Figure 1. Chest X Ray (A) of the patient showed parahilar lymph node and infiltrates at bases of the lung; (B) of the grandfather showed consolidation at apex accompanied with emphysematous lung](image)
negative. Blood gas analyze showed pH 7.31; pCO2 24.3; pO2 93, HCO3 12.5; BE -13.9; O2 saturation 98 %. Chest x-ray showed diffuse lung infiltrates, cardiothoracic ratio was 51 %. Electrocardiography showed sinus tachycardia with a rate of 120 – 140 times/minute. Echocardiography of the patient revealed minimal pericardial effusion and the kidney ultrasound of the patient showed normal contour of both kidneys.

Based on clinical manifestation and laboratory findings, the patient was diagnosed as Lupus Nephritis. The management at the moment were O2 2L/minute (nasal prong), IVFD D5 0.45 Saline 800 cc/24 hours, albumin 20% 50 cc infusion, furosemide 10 mg intravenous daily, methyl prednisolone pulse 300 mg intravenous daily for three days. INH 100 mg orally, ethambutol 100 mg orally, B6 10 mg orally were still continued. The patient was planned to check acid-fast bacilli (AFB) from gastric washing, PCR for tuberculosis and biopsy of cervical lymph node for confirm the diagnosis of pulmonary tuberculosis.

On the 3rd day of admission, the child condition was getting better, dyspnea and fever were already subsides. The swollen of the eyelid and extremities were slightly decreased. Laboratory examination revealed albumin 2,4; urinalysis showed albumin +4, no erythrocyte was found, leukocyte 1-2, epithelia was positive, there was granular cast, crystal was negative, oval fat bodies was negative and no bacteria was found.

On the 4th day of admission, the treatment of methyl prednisolone pulse was stopped and continued with
On the 12th day of admission, the swelling decreased. She was treated with albumin 20% infusion. The urinalysis showed albumin was +4, no erythrocyte was found, leukocyte was 2-3, epithelia was positive, there was granular cast, crystal was negative, oval fat bodies was negative and no bacteria was found. The patient was treated with albumin 20% infusion.

On the 6th day of admission, PCR for tuberculosis revealed negative. AFB from gastric lavage was found. The tuberculin skin test was negative, oval fat bodies was negative and no bacteria was found. The patient had no complain of joint pain and could walk normally.

On the 12th day of admission, the swelling decreased. Albumin serum was 2.8 and urinalysis revealed albumin was +2, no erythrocyte was found, leukocyte was 2-3, epithelia was positive, there was granular cast, crystal was negative, oval fat bodies was negative and no bacteria was found. The patient had no complain of joint pain and could walk normally.

DISCUSSION

The majority of children with tuberculosis infection develop no clear sign or symptoms at anytime. Tuberculosis is most common in young adults and children under 5 year of age. The systemic manifestations such as fever often occur (about 40-80% cases). The fever usually seen as low grade fever and fluctuating in the long time. The most common symptoms are anorexia, difficulty gaining weight (decrease, stay current, or increasing but have no appropriate with growth chart), and decreased activity. These complaints are difficult to measure and might be related with underlying disease. Chronic non-productive cough and dyspnea are most common in adult and even less common in infant or children. The most frequent setting for exposure of a child is the household, but it may also occur at school, day care center or other closed settings (Insleman 1998; Munoz 2004; Starke 2004). In this case, we found a 4 year-old child suffered from fluctuating low-grade fever accompanied by cough since six months ago. The body weight decreased gradually and she had lost of appetite. Her grandfather was presenting from chronic cough and stayed together with her. These clinical features mimic tuberculosis infection.

Bone or joints are affected in about 5% of patients with tuberculosis. There may be a history of previous infection or recent contact with tuberculosis. The patient, usually a child or young adult, complains of joint pain and swelling. In advances cases there may be attack of fever or lassitude and loss of weight. Muscle wasting is characteristic and synovial thickening is often striking (Apley 1993; Starke 2004). Skeletal tuberculosis usually results from lympho-hematogenous seeding of bacilli during the primary infection. The disease also might originate as the result of direct extension from a caseous regional lymph node or by extension from a neighboring infected bone. The infection usually begins in the metaphysis of the bone. Weight bearing bones and joints are affected most commonly. Other sites of skeletal tuberculosis, in approximate order of frequency, are the knee, hip, elbow, and ankle. The involvement can range from joint effusion without bone destruction, and restriction of the joint caused by chronic fibrosis of the synovial membrane. The diagnosis of skeletal tuberculosis should be considered in any child who is known to be infected with mycobacterium tuberculosis and in whom a bone or joint lesion develops with soft tissue swelling and peri-articular osteoporosis are characteristic. The tuberculin skin test is positive in up to 90% of cases (Apley 1993; Insleman 1998; Munoz 2004; Starke 2004).

In this case, the child suffered from pain on the knee joint and could not walk normally. There was no history of trauma. Physical examinations revealed swelling on the knee joint but no sign of muscle wasting. X-ray of knee joint and hip were not showed soft tissue swelling, joint effusion or periarticular osteoporosis. It could be the early stage of skeletal tuberculosis. In this patient the Mantoux test was negative. Many factors can influence the negative result of Mantoux test such as false negative caused by recent administration of live viral vaccines, malnutrition, and factors related to the administration of the test.

Tuberculosis of the superficial lymph nodes often referred to as scrofula and commonly on the cervical region. It is the most common form of extra-pulmonary tuberculosis in children. When that happens there is reason to think that there is a primary focus in the area, which drains into the swollen nodes. The tonsilar, anterior cervical, submandibular, and supraclavicular nodes become involved secondary to extension of a primary lesion of the upper lung fields or abdomen. Infected nodes in the inguinal, epitrochlear, or axillary’s regions result from regional lymphadenitis associated of tuberculosis of the skin or skeletal system. The nodes usually enlarge gradually in the early stages of lymph node disease. They are firm but not hard, discrete and nontender. The node often feels fixed to underlying or overlying tissue. The tuberculin test is usually reactive (Houwer 1998; Insleman 1998; Munoz 2004). In this case, on the physical examination multiple
lymphadenopathies on cervical and axillary’s region were found with dimension of 1x1 cm, firm, not hard and nontender. These lymphadenopathies were similar with extra pulmonary tuberculosis.

More than 95% of primary tuberculosis occurs in the lung parenchyma. Chest radiograph is a classic diagnostic tool when evaluating patients for pulmonary TB. Initial studies include poster anterior and lateral views. The primary complex includes three elements: the primary pulmonary focus, lymphangitis, and regional lymphadenitis. Primary complex (from chest radiographic) usually found in infants or young children than in adults. Chest radiographic has no specific view and can similar with other disease. Although interpretation of the size of intra-thoracic lymph nodes in radiographs can be difficult, the nodes in the right upper Para-tracheal area appear to be the ones most often affected. Other radiographic findings have a picture of lobar pneumonia without adenopathy being readily apparent. Normal radiographic (undetected) is not exclude the diagnosis of pulmonary TB if clinical sign and others examination have supporting the diagnosis. Generally, suspected tuberculosis from chest radiographic picture is: (1) para-hiller and para-tracheal lymph nodes enlargement associated or without infiltrates (2) Lobar or segmental consolidation (3) Miliary (4) Calcification (5) Atelectasis (6) Cavity, and (7) Pleural effusion found (Inselman 1998; Houwert 1998; Munoz 2004). In this case, the chest radiographic showed infiltrates on bases and paratracheal lymph node enlargement. It was one point of tuberculosis chest radiographic.

Diagnosis of tuberculosis in children can be difficult. There are many criteria used for diagnosis such as from WHO, Stegen and Jones and Respirology Working Group of Indonesian Association of Pediatrician. The Scoring system can be used to detect tuberculosis cases, before further investigations, such as AFB, biopsy, mycobacterium tuberculosis culture, were performed. Score ≥ 6 (maximal score is 14) considered as tuberculosis and must be treated for 2 months and evaluated of clinical progress. The scoring system is as follows:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB contact</td>
<td>Not clear</td>
<td>Family report, AFB – or not clear</td>
<td>Cavity +, AFB not clear</td>
<td>AFB + Positive (≥ 10 mm Or ≥ 5mm in immunocompromised condition</td>
</tr>
<tr>
<td>Tuberculin test</td>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bodyweight or nutritional status</td>
<td>BW/H&lt; 90 % or BW/age &lt; 80 %, BW not increased in 2 months</td>
<td>Severe malnutrition or BW/ H &lt; 70% or BW/age &lt; 60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fever without clearly source</td>
<td>≥ 2 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cough</td>
<td>≥ 3 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cervical lymph node, axillar, inguinal enlargement</td>
<td>≥ 1 cm, count ≥ 1, painless</td>
<td>Interrupted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swelling at bone/pelvic, knee, phalanx joint</td>
<td>Swelling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest radiography</td>
<td>Normal or unclear</td>
<td>Infiltrates, lymph node enlargement, segmental or lobar consolidation, atelectasis</td>
<td>Calcification+infiltrates, lymphnode enlargement + infiltrates</td>
<td></td>
</tr>
</tbody>
</table>

Clinical Manifestation of SLE Mimicking Tuberculosis in a 4 Year-Old Child (Nur Aisyah Wijaya, Ariyanto Harsono)

In this case, based on history, clinical and chest radiographic finding, there were 7 criteria as below: (1) The possibility of TB contact from her grandfather that suffered from chronic cough (2) Nutritional status was moderate malnutrition with Z score based on body weight/age was -3.5 SD, height/age was -3.7 SD, and weight/height was -2 SD; % IBW was 76% (3) Suffered from fever since 6 months ago (4) presented of chronic cough since 6 months ago (5) cervical and axillary’s lymph node enlargement (6) Swelling on knee joint (7) Chest radiography showed lymph node enlargement and infiltrates. The total score was 7. It was considered as tuberculosis and the treatment of TB for 2 months was started. The patient will be evaluated of clinical progress

Three weeks later, the patient suffered from swollen on the eyelids and feet’s accompanied with shortness of breath. The fever and cough still persisted. Pain on her knee joint still present and she couldn’t walk normally. Physical examination showed an alert girl with diffuse hair loss, anemic, dyspnea, cervical and axillary’s lymph node enlargement, ascites, and both of extremities were edema. The laboratory examinations revealed hemoglobin level 8.9 g/dl, serum albumin 1.4, and cholesterol 273, with normal renal function test. Urinalysis showed albumin +4, granular cast +, Esbach 3 g %. ANA test positive, C3 < 30, anti dsDNA moderate positive (197.5), the chest radiography showed infiltrates at both of lung. The echocardiography showed minimally pericardial effusion.

The further investigation of pulmonary tuberculosis revealed the AFB from gastric washing was negative for three consecutive days. The biopsy of cervical and axillary lymph node showed reactive hyperplasia and there was no specific process. The PCR for tuberculosis was also negative. The demonstration of acid-fast bacilli in stained smears of sputum or other body fluids is presumptive evidence of pulmonary tuberculosis in most cases. However, in children, tubercle bacilli usually are relatively few in number, and sputum cannot be obtained from children younger than 10 years of age. Gastric washings are often obtained (Starke 2004).

Lymph node tuberculosis may resolve if left untreated but more often progress to caseation and necrosis. A definitive diagnosis of tuberculous adenitis usually requires biologic or bacteriologic confirmation, which is best accomplished by excision biopsy of the involved node (Starke 2004). Use of PCR in childhood tuberculosis has been limited. Compared with a clinical diagnosis of tuberculosis in children, the sensitivity of PCR has varied from 25% to 83% and the specificity has varied from 80% to 100%. PCR may have a useful but limited role in evaluating children with suspected tuberculosis. A negative result on PCR assay never eliminates tuberculosis as a diagnostic possibility, and a positive result does not confirm it. The major use of PCR will be in evaluation of children with significant pulmonary disease when the diagnosis is not established readily by clinical or epidemiologic rounds and also may aid in confirming the diagnosis (Starke 2004). In this case, based on the data above, the diagnosis of pulmonary tuberculosis can be excluded because the AFB from gastric washing was negative for three consecutive days. The biopsy of cervical and axillary lymph node showed reactive hyperplasia and there was no found a specific process. The PCR TB was also negative. These examinations are used for confirmation the diagnosis.

The clinical manifestations of SLE can present with various manifestation. Children most frequently present with prolonged fever, weight loss, diffuse hair loss, anorexia, fatigue, and lymphadenopathy. The diagnosis is established by the combination of clinical and laboratory manifestations revealing multisystem disease. Criteria for the diagnosis of SLE require the presence of 4 of 11 criteria serially or simultaneously. The criteria according to American College of Rheumatology Classification Criteria for Systemic Lupus Erythematosus: the presence of four or more of the following 11 criteria, serially or simultaneously, during any period of observation as below (Gitelman 2004; Lehman 2002; Niaudet 2004; Petri 2004):

1. Malar rash: fixed erythema, flat or raised, over the malar eminences, tendency to spare the nasolabia.
2. Discoid rash: erythematous, flat or raised, with adherent keratotic scaling and follicular plugging; possibly atrophic scarring in older lesions.
3. Photosensitivity: skin rash as a result of unusual reaction to sunlight, as determined by patient history or physician observation
4. Oral ulcers: oral or nasopharyngeal ulceration, usually painless, observed by physician.
5. Arthritis: non-erosive arthritis involving two or more peripheral joints, characterized by swelling, tenderness, or effusion.
6. Serositis: pleurisy, by convincing history of pleurisy pain, rub heard by physician, or evidence of pleural effusion; or pericarditis documented by electrocardiography, rub heard by physician, or evidence of pericardial effusion.
7. Renal disorder: persistent proteinuria, > 500 mg per 24 hours (0.5 g per day) or > 3+ if quantitation is not performed; or cellular casts (may be red blood cell, hemoglobin, granular, tubular, or mixed cellular casts)
8. Neurological disorder: seizures or psychosis occurring in the absence of offending drugs or
known metabolic derangement (e.g. uremia, ketosis, electrolyte imbalance)

9. Hematological disorder: hemolytic anemia with reticulocytosis; or leukopenia, < 4,000 per mm3 on two or more occasions; or lymphopenia, < 1,500 per mm3 on two or more occasions; or thrombocytopenia, 100 per mm3 in the absence of offending drugs

10. Immunologic disorder: antibody to double-stranded DNA antigen (anti-dsDNA) in abnormal titer; or presence of antibody to Sm nuclear antigen (anti-Sm); or positive finding of antiphospholipid antibody based on an abnormal serum level of IgG or IgM anticardiolipin antibodies, a positive test result for lupus anticoagulant using a standard method, or a false-positive serologic test for syphilis that is known to be positive for at least 6 months and is confirmed by negative Treponema pallidum immobilization or fluorescent treponemal antibody absorption test.

11. Antinuclear antibodies: an abnormal antinuclear antibody titer by immunofluorescence or equivalent assay at any time and in the absence of drugs known to be associated with drug-induced lupus

In this case, she had prolonged fever, weight loss, diffuse hair loss, lymphadenopathy. According to American College of Rheumatology Classification Criteria, the diagnosis of SLE established by the presence of 6 from 11 criteria: (1) arthritis (2) serositis as presented by pericardial effusion from echocardiography (3) renal disorder as presented by the sign of nephrotic syndrome (4) hematological disorder was presented from anemia (5) immunology disorder as presented by pericardial effusion from echocardiography (6) positive antinuclear antibodies. Based on the data above, the diagnosis of SLE that manifest as lupus nephritis can be established.

Pulmonary involvement is common in SLE and occurs in 25% to 75% of cases. It will affect half of patients during the disease. The clinical spectrum includes pleuritis, pneumonitis, infectious pneumonia, pulmonary hemorrhage, pulmonary hypertension, and pneumothorax. Clinical manifestations include cough, dyspnea and pleurisy chest pain, the latter being accompanied by fever. Furthermore, other complications of lupus such as cardiac failure or nephrotic syndrome may lead to lung involvement with the development of pleural effusions. The most common early symptom of serositis is pleurisy chest pains; occur on both inspiration and expiration. Dyspnea may be the presenting symptom of many of the other complications of lupus to affect the lung. The chest radiograph is a simple and useful extension of the clinical examination of the patient with SLE. Early studies documented radiographic changes in the pleura, lung parenchyma, and heart (Benseler 2005; Keane 2000; Lehman 2002). In this patient, clinical manifestations include chronic cough, dyspnea, and accompanied by fever. The chest radiographic showed infiltrates at the bases of the lung. These clinical manifestations supported pulmonary involvement in SLE.

Cardiac involvement in SLE is common. The most common form of cardiac involvement is pericarditis with the sign of pericardial effusion. A large pericardial effusion will result in dyspnea. Although tamponade is quite rare and cardiac failure a late manifestation, it is usually worth inquiring about symptoms of peripheral edema and orthopnea. Patients with tamponade have the characteristic feature of generalized edema, small pulse volume with pulsus paradoxus, hypotension and grossly elevated jugular venous pressure (Benseler 2005; Roldan 1998).

The electrocardiogram is a simple bedside investigation that yields useful information on pericarditis, right or left ventricular hypotrophy, rhythm disturbances, myocarditis and myocardial ischemia or infarction. However, none of these sign is specific for lupus, and many studies have reported a prevalence of abnormal electrocardiograms in lupus. Abnormal electrocardiograms may be seen in as many as 77% of patient’s and as few as 17%. Sinus tachycardia is the most frequent abnormal finding followed by nonspecific ST-T wave change (Benseler 2005; Roldan 1998). Doppler echocardiography is an excellent noninvasive test for the diagnosis and monitoring of cardiac abnormalities in lupus patients. The technique are especially useful for the detection of pericarditis and pericardial effusions, valvular lesions, ventricular dysfunction, hypokinesia areas, aortic lesions such as dissection or dilatation, and pulmonary hypertension (Roldan 1998). In this case, dyspnea and edema were present. Large jugular venous pulsations were not visualized. Electrocardiography showed sinus tachycardia without wave abnormality and low voltage. The echocardiography revealed minimally pericardial effusion. These clinical manifestations were seemed the sign of cardiac involvement in SLE without sign of pericarditis.

Arthralgia or joint involvement is the most common manifestation of SLE, observed in 80% of cases and is one of the initial manifestations. Both large and small articulations are affected, causing moderate pain and articular swelling, predominantly of the metacarpophalangeal and proximal interphalangeal joints, wrists, and knee joints. The damage of articular tissues is often more pronounced than synovial damage, especially in the form of tendonitis. Arthritis is very rarely deforming, and synovial fluid contains relatively
view cell. Myalgia is less frequent. The deformity in SLE seems to be the consequence of ligament laxity combined with muscle imbalance, rather than the destructive effect of synovitis as in rheumatoid arthritis. This arthritis can be differentiated from rheumatoid arthritis by the absence of typical RA-like erosions from radiology, and rheumatoid factor serum level (Lehman 2002; Petri 2004). In this case, the child suffered from pain on the knee joint and she could not walk normally. There was swelling on both knee joints. It was confirmed by radiology examination that there was no deformity and sign of articular swelling. The rheumatoid factor serum level was normal. It was possible that the knee joint pain was caused by manifestation of SLE.

Renal disease is evident in approximately two thirds of children with SLE. Clinical symptoms of renal involvement are noted in 40 to 80% of patients, appearing most often during the first years. Because patient may present with few symptoms, careful laboratory monitoring is essential for early detection of lupus nephritis. Urinalysis is the most important and effective method to detect and monitor disease activity in lupus nephritis. Proteinuria is the most frequent symptom, accompanied by nephrotic syndrome. Hematuria (usually microscopic, rarely macroscopic) indicates inflammatory glomerular or tubulointerstitial disease, dysmorphic red blood cells are pathognomonic for glomerular disease. Red blood cell, white blood cell, and mixed cellular casts reflect nephritic states, while granular and fatty casts reflect protein uric states. Up to 50% of children with lupus nephritis have a decreased glomerular filtration rate. Renal biopsy may be necessary to delineate the exact type and severity of pathological lesions early in the course of lupus nephritis. Renal biopsy rarely helps the diagnosis of lupus, but it provides the greatest insight into the type, severity, and treatability of the renal disease (Gitelman 2004; Niaudet 2004). In this patient, the renal disorder was presented from the sign of nephrotic syndrome with proteinuria, hypoalbuminemia, and hypercholesterolemia were presented. Proteinuria, hypoalbuminemia, and hypercholesterolemia were presented. Renal function test was normal. Unfortunately, renal biopsy was not performed.

The goal of the treatment was the improvement of kidney function. Corticosteroids or other immunosuppressive medications are often effective in reducing symptoms. Whether high doses of corticosteroids or immunosuppressive are likely to be beneficial depends on the precise findings on kidney biopsy. Methylprednisolone remains the most effective and rapidly acting immunomodulator therapy of both the initial episode and the recurrence of active renal disease. In the management of lupus nephritis, it can be administered in pulses with the dose of 30 mg per kg (maximal dose: one gram). It is given daily in three days and then monthly in twelve months (Font 1998; Gitelman 2004; Niaudet 2004; Petri 2005). Prednisone is an alternative of methylprednisolone. It can be given with a dose of one mg per kg per day in four to twelve weeks as the initial treatment. Alternatively it can be given with the dose of 2-4 mg per kg, administered in alternating day (Font 1998; Petri 2005). In this case, the patient was treated with methylprednisolone pulse and continues with prednisone orally.

CONCLUSION

A case of a 4 year-old girl with clinical features of prolonged fever, cough and loss of appetite and weight was admitted to hospital. In the first hospital visit, the patient had clinical pictures mimicking with tuberculosis. Based on the criteria according to scoring system from Respirology Working Group, the patient was considered as tuberculosis and must be treated for 2 months and evaluation of clinical progress. Three week later, the patient was brought to hospital with clinical sign as nephrotic syndrome. Clinical sign and laboratory examination lead to suspicion of Lupus Nephritis. According to criteria from the American College of Rheumatology for classification of SLE, the diagnosis of SLE was established by the presence 6 out of 11 criteria. The diagnosis of tuberculosis was excluded by further examination such as AFB from gastric washing was negative for three consecutive days. The biopsy of cervical and axillar lymph node showed reactive hyperplasia without sign of specific process. The PCR for tuberculosis was also negative. Treatment with pulse dose Methyl prednisolon and oral prednisone results in the improvement of symptoms.

REFERENCES

patients and comparison with SLE characteristics in adults’, *Am Rheum Dis*, vol. 57, pp. 56-59.


