CASE REPORT

Secondary syphilis in a 13-year-old Indonesian girl: a social problem

Pati Aji Achdiat1*, Rafithia Anandita1, Rasmia Rowawi1, Oki Suwarsa1, Reti Hindritiani1, Hendra Gunawan1

ABSTRACT

Introduction: Secondary syphilis is characterized by skin and mucous eruptions, such as condyloma lata. Syphilis cases are rare in children. Several factors could influence sexually transmitted infections (STIs) in children, such as lack of knowledge of STIs, parenting, social environment, parents’ marital status, occupation, and education. We reported one social case of secondary syphilis in a 13-year-old girl.

Case Presentation: We did history taking, physical, and laboratory examinations. From history taking, the patient did not know about the signs and symptoms of STIs, has bad parenting, a bad social environment, divorced parents, and parents’ low education. On physical examination, there were skin-colored papules, plaques, and nodules on the labia majora, minora, and perianal. The venereal disease research laboratory (VDRL) result was reactive. The patient was treated with single dose injection of 2.4 million international units benzathine penicillin G and was educated for signs, symptoms, and complications of STIs, and the danger of risky sexual behavior. There were improvement of the lesions 10 days after therapy, decreased of VDRL titer 4x in one month after therapy, and no longer have sexual activity.

Conclusion: Social condition can cause STIs in children. The bigger scope of education programs for children is needed to prevent STIs.

Keywords: condyloma lata, children, secondary syphilis, sexually transmitted infection
INTRODUCTION
Syphilis is an infectious disease caused by the spirochete bacterium Treponema pallidum subspecies pallidum, and is generally transmitted through sexual contact. Secondary syphilis is a stage of syphilis with manifestations on the skin and mucous membranes, one of which is condyloma lata (Kinghorn GR, 2016). Condyloma lata is the most common skin manifestation of secondary syphilis, (Narang T, 2013) as skin-colored or hypopigmented papules or plaques (Deshpande DJ, 2010). Cases of syphilis in children are rare. However, the incidence of STIs is increasing in children (Nadhira SJ, 2019). This may be due to several factors, including lack of knowledge about STIs, parenting patterns, social environment, parents’ marital status, parents’ occupations, and parental education (Ministry of Health of the Republic of Indonesia, 2015). World Health Organization (WHO) estimates that approximately 150 million girls under the age of 18 experience risky sexual behavior (Nadhira SJ, 2019). The age group 10 to 19 years is more at risk for STIs than adults (World Health Organization. Sexually transmitted infections (STIs), 2019). This case report aims to report several factors that can cause a child, in this case a 13-year-old girl, has an STI, specifically secondary syphilis.

CASE PRESENTATION
A 13-year-old girl, came to Dermatology and Venereology Clinic, Dr. Hasan Sadikin Hospital, Bandung, Indonesia, presented with skin-colored plaques on the labia majora, minora, and perianal that felt itchy (Figure 1 and 2a). From history taking, it is known that the skin manifestation first appeared one month before treatment in the form of a green bean seed-sized skin-colored papule on the labia majora that felt itchy. One week before treatment, the skin-colored papules were increasing in number and growing into plaques with a flat surface and skin-colored nodules on the labia majora, minora, and perianal. There were also non-itchy erythematous macules on both soles since four days before treatment. There was no history of painless erosions on the genitals, vaginal discharge, sign and symptoms of human immunodeficiency virus (HIV) infection, or neurosyphilis.

The patient was unmarried and the history of coitarche was at the age of 12 years with her boyfriend without condom. Her boyfriend was 21-years-old college student, with unknown history of STIs. He refused to come and be treated in our clinic and preferred other. The last sexual intercourse was four days before skin manifestations occurred.

The patient lives with her biological mother and stepfather. She is the youngest child and is often alone at home without supervision. The patient admitted to having sex without coercion and out of curiosity, and also have a lack of knowledge about STIs, and is in a bad social environment. On physical examination, general condition and vital signs were within normal limits. On both soles there were multiple lesions, some were confluent, irregular in shape, the smallest size was 0.5x0.3 cm and the largest size was 1.5x0.5 cm, as hyperpigmented macules (Figure 2). On the labia majora, minora, and perianal, there were multiple lesions, some were confluent, irregular in shape, the smallest size was 0.3x0.2x0.2 cm and the largest size was 3x2x0.5 cm, as skin-colored papules, plaques, and nodules (Figure 3ab). There were no oral lesions were found.

The results of blood laboratory examinations of anti-HIV and HBsAg were nonreactive, reactive treponema pallidum hemagglutination assay (TPHA) with titer 1:2560, and quantitative VDRL was reactive with titer 1:64. Based on history taking, physical, and laboratory examination, the patient was diagnosed as secondary syphilis. She was given therapy of single dose injection of benzathine penicillin G 2.4 million IU, i.m, and was educated about the signs, symptoms, and complications of STIs, as well as the dangers of
risky sexual intercourse. On the 10th day after therapy, there were improvement of the lesions.

The skin-colored papules, plaques, and nodules on the labia majora, minora, and perianal were decreasing in number (Figure 3). The histopathological examination from skin-colored plaque on the labia majora was then release, showed a psoriasiform reaction with regular rete ridges, pigment incontinence, and dilation of blood vessels in the papillary dermis (Figure 4a and 4b), supporting the diagnosis of secondary syphilis. The erythematous macules on both soles were also diminished. The quantitative VDRL was decreased four times, to 1:16 in the first month. We also evaluate the basic characteristics of STI knowledge in the patient which show that the patient never received information on STIs, and does not have knowledge on STIs, and have false understanding on STIs.

### Table 1. Questionnaire of the basic characteristics of STI knowledge

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Have you heard of HIV infection and STIs that you can get through sexual intercourse?</td>
<td></td>
<td></td>
<td>V</td>
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<tr>
<td>2</td>
<td>Where did you get information about STIs and HIV?</td>
<td></td>
<td></td>
<td>V</td>
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<tr>
<td>3</td>
<td>What are the signs and symptoms of STIs and HIV?</td>
<td></td>
<td></td>
<td>V</td>
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<tr>
<td>4</td>
<td>If someone have sexual intercourse with one partner, is at risk of contracting an STI?</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>5</td>
<td>Is it possible for a person to have HIV infection without symptoms?</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>6</td>
<td>Is it possible for a person to have an STI without symptoms?</td>
<td></td>
<td></td>
<td>V</td>
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<tr>
<td>7</td>
<td>What are the complications of an STI if left untreated?</td>
<td></td>
<td></td>
<td>V</td>
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<tr>
<td>8</td>
<td>Can HIV be completely cured?</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>9</td>
<td>Can all STIs other than HIV be completely cured?</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>10</td>
<td>If the STI symptoms have disappeared, has the disease been cured?</td>
<td></td>
<td></td>
<td>V</td>
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<tr>
<td>11</td>
<td>Can condoms prevent STIs and HIV?</td>
<td></td>
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<td>V</td>
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</tbody>
</table>

(Ministry of Health of the Republic of Indonesia, 2015)

**DISCUSSION**

Syphilis is a disease that is generally transmitted through sexual contact. This disease is caused by infection of the spirochete bacterium *T. pallidum* subspecies *pallidum* (Kinghorn GR, 2016). In 2008, WHO predicted that approximately 36.4 million individuals aged 15 to 49 years were infected by syphilis (Sparling PF, 2008). There are four stages of syphilis; primary, secondary, latent, and tertiary syphilis. Secondary syphilis is a stage of syphilis with skin and mucous membrane manifestations (Kinghorn GR, 2016). The lesion of secondary syphilis can be in the form of non-itching erythematous or copper-red macules, 5-10 mm in size (Patterson JW. 2016). One of the most common skin manifestations in secondary syphilis is condyloma lata (Narang T, 2013). Condyloma lata has a clinical manifestation of skin-colored or hypopigmented papules or plaques (Deshpande DJ, 2010). Laboratory examinations that can be performed to confirm the diagnosis of syphilis are VDRL and TPHA. (Kinghorn GR, 2016). In our study, the basis of diagnosis is the clinical features of syphilis which we found in the patient including the presence of condyloma lata, presenting as skin-colored papules, plaques, and nodules on the labia majora, minora, and perianal, and multiple erythematous and hyperpigmented macules on both soles. The laboratory examination performed in the patient showed VDRL result positive with titer 1:64 and TPHA was positive with titer 1:2560. This data supports the diagnosis of secondary syphilis in the patient.

Histopathological features of condyloma lata may reveal epidermal hyperplasia and dermal infiltrates, elongation of the rete ridges, vascular changes, and neutrophil exocytosis in the upper layers (Indasari Y, 2019). In our study, the histopathological findings support the diagnosis of secondary syphilis.
According to World Health Organization in 2016 The treatment recommended for early syphilis (primary, secondary, and early latent syphilis of more than two years' duration) there are no difference treatment between adult with patients 10-19 years of age which are single dose of BPG injection 2.4 million IU, i.m (World Health Organization. Sexually transmitted infections (STIs), 2019). In this case, the patient was treated with benzathine penicillin G injection 2.4 million IU, i.m, a single dose. Improvement of the lesion was seen on day 10 after therapy, as the skin-colored papules, plaques, and nodules on the labia majora, minora, and perianal were reduced in number. In addition, there is also diminished of erythematous macules on both soles. The treatment of syphilis is said to be successful if there is a quantitative decrease in VDRL four times within six months (Patterson JW. 2016) .In our study, there was improvement of the lesions on the 10th day after therapy and a quantitative decrease in VDRL four times, to 1:16 in the first month.

Children and young adults aged 15-24 years are more at risk of developing STIs than adults (Subbarao NT, 2017). In our study, the patient was a 13-year-old girl with a history of sexual intercourse. The prevalence of condom use among Indonesian children and young adults is very low (Ministry of Health of the Republic of Indonesia, 2015). The results of a study conducted by Nadhira (Ministry of Health of the Republic of Indonesia, 2015) in 2019, found that 34.28% of respondents had their first sexual intercourse at the age of under 18 years old. Knowledge of STIs, especially in developing countries is still low (Ministry of Health of the Republic of Indonesia, 2016). The patient's history of coitarche was at the age of 12 years and did not use condom. Patients also do not know about the symptoms and complications of STIs.

Less than 8% of children and young adults are aware of reproductive health counseling. The Adolescent Health Program (Program Kesehatan Remaja or PKR) is one of the government's efforts in dealing with the low knowledge of STIs in children. The Ministry of Health of Indonesia develops health services, Youth Care Health Service (Pelayanan Kesehatan Peduli Remaja or PKPR). Districts or cities in Indonesia that can do PKPR are still below the target (Houck C, 2014) based on table 1, in this study, the patient never received education and information about reproductive health and STIs, moreover, the patient no knowledge on STIs any false perception such as she perceived that all STIs and HIV can be cured, this combination of understanding can lead to risky behavior. Positive parenting patterns, such as increased supervision and communication between children and parents, are associated with a lower risk of sexual behavior in children (Sari SN, 2012). Both of the patient's parents work from morning until night, so the patient is often left alone at home, unsupervised, and rarely interacts with her parents. The patient also communicates more often with her schoolmates than with her parents. In the Living environment and society environment are also factors that can cause early sexual behavior (Indasari Y, 2019). In addition, there is also an influence of peer behavior and partner relationship that can increase risky sexual behavior (Ministry of Health of the Republic of Indonesia, 2015), (Sari SN, 2012). In one study involving STIs patients aged 15-24 years, >= 5-year age discordance and history of STIs in the past year were associated with higher risk of having STIs. In this e, the patient is often left alone at home, without supervision. Some of the patient's school friends are known to have sexual activities. The patient is also known to have a boyfriend and started dating at the age of 12.

Although the history of STIs was unknown, but the age discordance between the patient with her boyfriend was 8 years which may play role as risk factor for having STI's in this patient. Based on this case, it can be concluded that the patient has a poor parenting pattern from his parents and is in a bad social environment. This can support the occurrence of early sexual behavior. Several other influencing factors are parents' marital status, parents' occupation, and parental education (Ministry of Health of the Republic of Indonesia, 2015). The patient's parents were divorced 13 years ago and had remarried seven years ago. The patient's biological mother works as a clothing trader in the market, while the patient's stepfather works as a casual daily laborer. Both of her parents had a recent education history of elementary school. This supports the behavior of early sexual intercourse in this case. Some of the reasons children and young adults have sexual intercourse at an early age.
are out of curiosity and is forced by a partner (Houck C, 2014). The patient's reason for having sexual intercourse is out of curiosity and without coercion from her sexual partner. Social conditions can cause STIs in children. The scope of education programs for children in Indonesia currently is not running well, therefore a wider coverage is needed to prevent STIs.

CONCLUSION
Additional efforts regarding education, and treatment scope on STIs including syphilis need to be given to children.

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