CASE REPORT:
PHARINGEAL TUBERCULOSIS WITH MILLIARY TUBERCULOSIS

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ABSTRACT

Background: *Tuberculosis (TB) based on its manifestations is divided into two, pulmonary and extra pulmonary. Extrapulmonary TB can be miliary TB and pharyngeal TB. Miliary TB is spread by hematogenous spread to several organs. The diagnosis of extrapulmonary TB takes a long time, an accurate examination can determine extrapulmonary TB infection.*

Case Presentation: *A 47-year-old man complained of recurrent pharyngitis and with symptoms of the respiratory system. Physical examination revealed white granulomatous lesions of the pharyngeal mucosa. The results of the tissue biopsy were performed with Ziehl Neelsen staining. The chest x-ray showed miliary tuberculosis. Diagnostic confirmation using sputum and tissue culture on Lowenstein Jensen medium, MPT64, and niacin paper strip test. Gene Xpert results detected Mycobacterium TB and Rifampicin resistance. Antituberculosis is given for four months.*

Conclusion: *Physical examination of the throat revealed granulomatous inflammation and chest X-ray revealed miliary tuberculosis. The results of sputum and tissue culture on Lowenstein Jensen medium, MPT64, and paper strip test for niacin showed positive TB.*

Keywords*: Pharyngeal tuberculosis, miliary tuberculosis, extrapulmonary tuberculosis.*

INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by bacteria bacillus *Mycobacterium tuberculosis* and TB is one of the top 10 disease cause the most deaths worldwide according to *World Health Organization* (WHO).[1,2] TB commonly presents with pulmonary and extrapulmonary manifestations. One form of extrapulmonary TB is miliary TB and pharyngeal TB. Milliary TB caused by the widespread hematogenous dissemination of *Mycobacterium tuberculosis*.[3,4,5] The definite diagnosis is established by radiological and histological, and microbiological findings. According to the Center for Disease Control and Prevention, in the United States new tuberculosis cases were reported about 8920 for the year 2019. Miliary tuberculosis accounts for about 1% to 2% of all cases of tuberculosis and up to 20% of all forms of extrapulmonary tuberculosis in immunocompetent individuals.[6,7]

Oral TB is usually secondary to pulmonary tuberculosis, usually results

from secondary inoculation of oral mucosa breached by any type of ulceration or by minor masticatory trauma, by infected sputum.[8] TB pharyngeal or oral cavity only is rare but some literature describe about pharyngeal TB and tuberculosis cases in generally increasing and it is possible to take sample of isolate pharyngeal or oral cavity. Tuberculosis rarely manifests in the pharyngeal area.[9] Pharyngeal tuberculosis usually occurs in children and is an asymptomatic primary infection followed by cervical lymphadenopathy. Pharyngeal tuberculosis is often a secondary infection in patients who are positive for tuberculosis infection on sputum examination. Pharyngeal tuberculosis occurs due to sputum produced in contact with the nasopharyngeal area for a long time.[10] We report a rare case of a patient with pharyngeal TB and Milliary TB.

CASE REPORT

A 47-year-old man, came to Kariadi Hospital complaining of recurrent pharyngitis, swallowing pain with other respiratory symptoms likes cough, fever, pharyngeal pruritus and dyspnea. He reported having pulmonary diseases (pulmonary tuberculosis) and the treatment was complete and healed. She did not smoke and drank alcohol.

Figure 1. Pharynx with granulomatous inflammation

Physical examination: found granulomatous lesion from the mucosa of pharynx, hyperemic involving on both the soft palate, uvula, tonsil and the posterior pharyngeal wall without ulceration **(Figure 1)**. We remove tissue fragmen on both the soft palate for gram staining, Ziehl Neelsen staining, culture for fungi, culture in Lowenstein Jensen medium and Gene Xpert. From gram staining, there was no

fungus and no growth in the fungal media. The sputum and tissue examination from biopsy for Ziehl Neelsen staining was positive with *Polymorphonuclear* (PMN) 10/hpf **(Figure 2).**

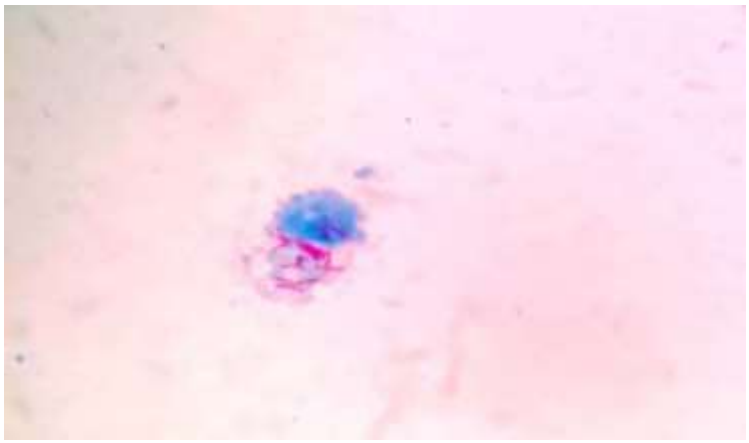

Figure 2. the tissue examination from biopsy for Ziehl Neelsen staining

Diagnostic confirmation was using sputum and tissue culture in Lowenstein Jensen medium, culture was growth after 4 weeks. The colony yellowish white (*buff coloured)*, 20-30 colony, brittle, dry with irregular edges **(Figure 3).** Colonies obtained in Lowenstein Jensen medium were stained with Ziehl Neelsen showing clustered image of bacilli (*serpentine cord)* **(Figure 4).** The MPT64 and niacin paper strip test examination from the colony were positive. Gene Xpert result from tissue was *Mycobacterium tuberculosis* detected and Rifampicin resistant. The radiologic pulmonary showed miliary tuberculosis. the diagnosis of pharyngeal tuberculosis with milliary tuberculosis. Anti-tuberculosis was given for four months.

Figure 3. the tissue culture in Lowenstein Jensen medium and Ziehl Neelsen staining from colony

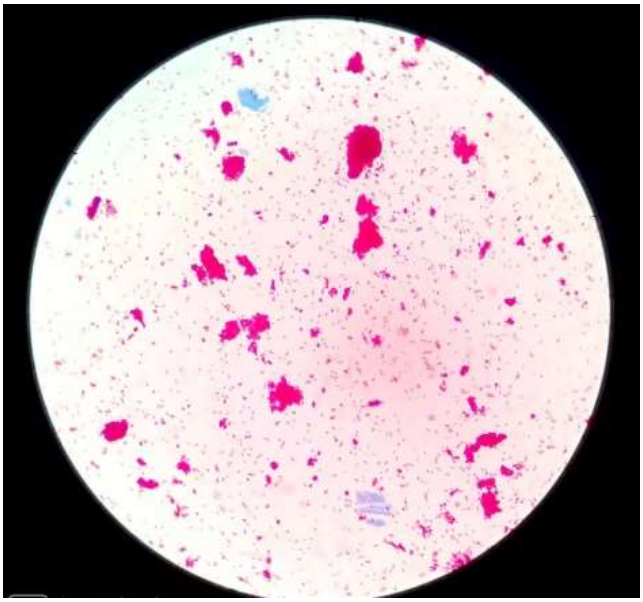

Figure 4. Ziehl Neelsen staining form colony culture

DISCUSSION

Pharyngeal tuberculosis is a disease that needs attention because its incidence can follow pulmonary tuberculosis, while the incidence of pulmonary tuberculosis in Indonesia is still high. The number of new TB cases in Indonesia was 420,994 cases in 2017 (data as of May 17, 2018). Based on gender, the number of new TB cases in 2017 in males was 1.4 times greater than in females. Even based on the Tuberculosis Prevalence Survey, the prevalence in men is 3 times higher than in women. The same is happening in other countries. This may be because men are more exposed to TB risk factors, such as smoking and lack of medication adherence. This survey found that of all male participants who smoked only 68.5% and 3.7% of female participants smoked.

The pharynx is part of the upper respiratory system and is very rare because in the oral cavity there is protection against bacterial infection and tuberculosis by saliva. Saliva inhibits the growth and multiplication of tuberculosis rods by phagocytosis. Tuberculosis in the oral cavity can occur if there is an injury to the oral mucosa, it can be due to chronic irritation, leukoplakia, poor oral and dental hygiene and tooth extraction. Without this predisposition, infection with Mycobacterium tuberculosis can occur by crossing the mucosal barrier by endocytosis in mucosal lymphoepithelial sites. Phagocytes containing intracellular mycobacteria spread the infection to other parts of the body and may also migrate back to the mucosal surface to expel the tuberculosis bacillus.[11,9]

Mycobacterium tuberculosis reaches the lungs captured by macrofaq. Phagocytes containing intracellular mycobacteria spread to extra lungs, for

example in pharyngeal tuberculosis.[11,12] Pharyngeal tuberculosis may progressively spread haematogenously to become miliary tuberculosis. There are three types of pharyngeal tuberculosis. type I is acute miliary tuberculosis, which spreads through the blood to the pharynx, type II is chronic ulcerotuberculosis, type III is lupus vulgaris, which spreads from the nose to the pharynx to form a hard ulcer. in this patient is included in type I where the patient with miliary tuberculosis then spreads to the pharynx via the bloodstream.[12]

In this case report the diagnosis of pharyngeal tuberculosis can be confirmed from the clinical picture and microbiological examination of the pharyngeal tissue.

CONCLUSIONS

Diagnostic this patient pharyngeal tuberculosis with milliary tuberculosis and the examination result of sputum and tissue culture in Lowenstein Jensen medium, Gene Xpert, MPT64, and niacin paper strip test was positive for TB. An oral examination found granulomatous inflammation and chest X-ray found milliary tuberculosis.

Pharingeal tuberculosis is not a common site for clinically manifest tuberculosis and extremely rare. The possibility of concomitant pulmonary TB should also be considered in patient with oral TB. Pharingeal tuberculosis is often not diagnosed or diagnosed with other infection such as fungi. The Characteristic clinical picture and accurate investigations can help make the diagnosis.

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