International Journal of Medical Science and Research
www.medicaljournals.in
Online ISSN: 2664-8768, Print ISSN: 2664-875X
Received: 10-03-2022, Accepted: 26-03-2022, Published: 11-04-2022
Volume 4, Issue 1, 2022, Page No. 26-30

Management of submandibular abscess with hiv infection 1st stadium who pre haart

I Dewa Gede Arta Eka Putra, Putu Dian Ariyanti Putri
Department of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine, Udayana University, Denpasar, Indonesia

Abstract
Abscess in the submandibular space is one of the most common deep neck abscesses. The submandibular space is a potential space in the neck consisting of the sublingual and submaxillary spaces separated by the mylohyoid muscle. It has been reported a 51-year-old male patient with a diagnosis of sinistra submandibular abscess with HIV infection stage IV pre HAART, in this patient previously had a history of lymphadenitis and a history of needle biopsy in the submandibular before the formation of an abscess in the sinistra submandibular, in this case it did not experience extension to the other potential spaces and on treatment showed improvement after incision drainage of the abscess and receiving medical therapy.

Keywords: abscess, submandibular, HIV, incision, drainage

Introduction

Deep neck abscess is defined as a localized collection of pus that forms in the potential space between the deep neck fascia as a result of tissue damage which is the spread of infection from various sources, such as teeth, mouth, throat, paranasal sinuses, middle ear and neck. At this time tonsillitis is the main cause in children, while in adults the infection is mainly from dental or odontogenic sources. [1, 2 3]

Abscess in the submandibular space is one of the most common deep neck abscesses. The submandibular space is a potential space in the neck consisting of the sublingual and submaxillary spaces separated by the mylohyoid muscle. [4] Besides being caused by dental infection, infection in the submandibular space can be caused by sialadenitis of the submandibular gland, lymphadenitis, trauma or surgery and can also be a continuation of other deep neck space infections. The cause of infection can be caused by aerobic bacteria, anaerobic bacteria or mixed bacteria. Submandibular abscess occupies the highest order of all deep neck abscesses [1, 2, 4]. Some studies have found that the incidence is more in men than women. [4, 6, 7] Predisposing factors are poor orodental hygiene, diabetes mellitus and the presence of immunodeficiency diseases. [2, 3, 7] Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system which causes the body to become weak, is one of the immunodeficiency diseases. The incidence of HIV is increasing every year. HIV and AIDS (Acquire Immune Deficiency Syndrome) has become a problem of global emergencies. In worldwide 35 million people are living with HIV and 19 million are unaware of their HIV positive status. HIV/AIDS is also a problem in Indonesia, which is the 5th most at risk of HIV/AIDS in Asia. HIV infection based on clinical stage according to WHO is divided into 4 stages [8].

Management of submandibular abscess includes optimal abscess drainage incision and administration of adequate antibiotics. [3, 8, 9] The incidence of submandibular abscess has decreased, this is due to the widespread use of antibiotics and improved oral health, but the morbidity rate from complications caused by submandibular abscess is still quite high so that prompt and appropriate diagnosis and treatment is needed. [1-3, 7]

Case Report

A 51-year-old man with the initials INSY, Hindu, Bali, self-employed came to the Emergency Room of Sanglah Hospital on December 5th, 2020 with a complaint of swelling under his left jaw. From the anamnesis it was found that the swelling had been felt by the patient since approximately five days earlier. The patient also had difficulty opening his mouth and had a fever that developed approximately five days before admission to the hospital. There was no chest pain or shortness of breath. The patient has difficulty eating, especially solid food, but can still eat soft foods and drink. Previously, the patient complained of a lump in the lower left jaw since approximately 2 weeks ago, the lump was not painful, not progressive, then the patient went to several doctors and underwent an aspiration examination on the lump with the results of inflammation or chronic inflammation, there was a history of patient take traditional's massage. Then prescribed antibiotics and anti-inflammatory drugs. There is no history of toothache, there is no history of diabetes in this patient.

The general condition of the patient was moderate, compos mentis, blood pressure 120/90 mmHg, pulse rate 92x/minute, respiration rate 20x/minute and temperature 38.8°C. There were no signs of dehydration. Ears and nose in normal. The throat is difficult to evaluate because of the trismus so that the patient can only open his mouth about 2 cm. Oral hygiene is good. In the left submandibular region, edema and hyperemia were seen. Hot

on palpation, there is tenderness and fluctuation. On aspiration in the area found pus. The aspirated pus is sent to the laboratory for culture and sensitivity testing. The patient was diagnosed with left submandibular abscess.

The patient agreed to be hospitalized and had blood glucose checks, complete blood counts, blood chemistry, rapid tests and AP chest X-rays. With the results of the blood glucose examination was 149 mg/dL and leukocytes 14.05/µL, a non-reactive rapid test, the results of an AP chest x-ray with cardio and pulmonary impressions showed no abnormalities. An intra vena fluid drip of NaCl 0, 9% and dextrose 5% was installed at a rate of 20 drops/min. An incision was made on the left submandibular abscess, 300 cc of foul-smelling yellow pus came out and sterile drain was installed. The patient is bedridden in the Trendelenburg position. The antibiotics given were ceftriaxone 1gr every 12 hours intravenously and metronidazole 500mg every 8 hours intravenously. The anti-inflammatory drugs given were methyl prednisolone 62.5mg every 12 hours intravenously, analgesics with ketorolac 30mg every 8 hours intravenously, anti-emetics with omeprazole 40mg every 12 hours intravenously and antipyretic paracetamol 500mg every 8 hours intraorally.

Dilatation was performed, toilet wound and daily sterile drain replacement on abscess incision wound. On December 8th of 2020, in the left submandibular region pus's production ± 50 cc, edema in the left submandibular region is reduced and trismus reduced to 3 cm. The patient was consulted with a dental and oral doctor. The answer to the consultation from a dentist the teeth and mouth of the lower right and left mandibular teeth was no caries, the third molars were fully erupted, there was no impacted teeth, the patient was planned for a panoramic x-ray to look for focal infection from the teeth. Culture results from samples taken on December 6th of 2020 did not show any germ growth. On December 11st of 2020, after the 7th day post-incision abscess drainage, the patient's complaints had decreased considerably, the fever was gone, the trismus disappeared, there was no painful. On physical examination in the left submandibular region, there was no edema, there was hyperemia, no fluctuation, no pus production, on palpation in the left submandibular region, there were solid lumps, multiple, 3x3 cm and 3x2 cm in size, painless, mobile. The patient was discharged, with paracetamol 500 mg every 8 hours intraoral and cefixime 200mg every 12 hours intraoral and controlled on Monday, December 14, 2020, and a biopsy was planned for the colli sinstra.

On December 13rd of 2020, at 05.00 WITA, the patient came back to the emergency room of Sanglah Hospital with complaints of high fever, which the patient had felt since 1 day ago before entering the hospital. The patient also complained of pain in the left lower jaw, and swelling in the left lower jaw that had been felt since 1 day ago, it was difficult to open the mouth, nausea, vomiting, pain in swallowing, eating and drinking a little, coughing, shortness of breath, there was history of black defecate since yesterday afternoon. The general condition of the patient was moderate, compos mentis, blood pressure 120/90 mmHg, pulse rate 96x/minute, respiration rate 20x/minute and temperature 40°C. There were no signs of dehydration. Ears, nose, throat in normal. In the left submandibular region, edema and hyperemia were seen, hot on palpation, there is tenderness and fluctuation. The patient was diagnosed with febrile observation + dyspepsia + low intake with left submandibular abscess post drainage incision on tenth day.

The patient agreed to be hospitalized and had blood glucose checks, complete blood counts, blood chemistry, rapid tests and PA chest X-rays. The results of the blood glucose examination were 146 mg/dL and leukocytes 25.340/µL, SGOT 169.1 U/L, SGPT 175.10 U/L, albumin 2.60 g/dL, rapid test non-reactive and PA thorax examination results with the impression compared to the previous photo on December 5th of 2020: Pneumonia, please clinical correlation, Cor does not show abnormalities. Oxygen was given by nasal cannula 3 lpm, intra vena fluid drip was placed with NaCl 0,9% and dextrose 5% at rate of 20 drops/minute. A wound toilet was performed, the dilatation was found to be approximately ± 30 cc of pus, then drainage was performed. The patient is bedridden in the Trendelenburg position. The antibiotics given were ceftriaxone 1gr every 12 hours intravenously and metronidazole 500mg every 8 hours intravenously. The anti-inflammatories given were methyl prednisolone 62.5mg every 12 hours intravenously, anti-emetic with omeprazole 40mg every 12 hours intravenously and paracetamol 500mg every 8 hours intraorally. Patients were consulted to Internist doctor, Respiratory and Pulmonary doctor and Thorax-vascular Surgeon

The results of the answer from the Internist doctor on December 13rd of 2020, the patient was *assessed* by Left submandibular abscess post drainage incision on tenth day with dyspepsia syndrome with observation of viral differential diagnose with reactive ec susp transaminitis with hypoalbumin ec chronic inflammation. The management provided by Internist doctor is joint care of the Gastro-enterology division, given intra vena fluid drip NaCl 0.9%:aminofuscin 1:1 20 tpm, flaccid diet 1900 calories/day, lansoprazole 30 mg every 24 hours intraorally, paracetamol 500 mg every 8 hours for intraoral, and the patient is planned to be examined for pus culture and sensitivity to antibiotics, HBsAg, anti-HCV, consultant TS Clinical Nutrition for administration of Vip Albumin.

The results of the response from Respiratory and pulmonary consul on December 14th of 2020, the patient was assessed by

1. Suspected late onset HAP
2. Sincitra submandibular abscess post drainage on tenth day
3. Observation melena ec erosive gastritis dd peptic ulcer
4. Oral candidiasis

Management given by Respiratory Pulmonary doctor are given oxygen using a 6-8 lpm mask, given antibiotics ceftriaxone 2gr every 24 hours intravenously, levofloxacin 750mg every 24 hours intravenously, given mucolytic N-acetylcysteine 200mg every 8 hours intraorally, and the patient is planned for sputum culture and *Provider Initiated Testing and Counseling (PITC).*

The results of the answer from the consul to Thorax-vascular Surgeon on December 14, 2020, the patient was *assessement* with a left submandibular abscess after a drainage incision with suspected HAP pneumonia, and the patient was planned for a Cervical-thoracic CT Scan.

On December 15th of 2020, the complaint that the fever is reduced, reduced shortness of breath, reduced swallowing pain, reduced nausea and vomiting, reduced cough, reduced black defecate, on physical examination found in the left submandibular region edema there, hiperemis there, crepitations there, pus mixed with blood there are approximately 20 cc, given the therapy is the same as the previous day incision and drainage were performed every day and culture and antibiotic sensitivity tests were carried out on pus at the base of the wound.

The results of the Voluntary Counseling and Testing (VCT) consul's answer revealed that there was HIV infection with a reactive test result, and it was suggested to contact the Internal Medicine Division of Tropical Diseases and Infections for CD4 examination.

On December 17th of 2020, the patient's complaints of cough and nausea have decreased, there is no fever, no black defecate. On physical examination, there was edema in the left submandibular region, hyperemia, no crepitus, pus production of approximately 3 cc mixed with blood, the patient underwent a complete blood laboratory examination with a leukocyte level of 5.24/µL, hemoglobin 8.10 g/dL, planned PRC transfusion (Packed Red Cells) 2 bags by Internal Medicine, the patient is also examined for sputum culture by Respiratory and pulmonary doctor. the results of culture and test the sensitivity of the wound is not obtained growth of pathogenic bacteria specifically from specimens of patients, patients underwent a CT Scan Thorax slice axial with contrasting pieces of coronal and sagittal, patients in the assessment with an abscess of the submandibular the left post incision drainage on twelfth day with stage HIV infection IV preHAART (Highly Active Antiretroviral Therapy), patients over the leader to TS Diseases in Tropical and Infectious Diseases division.

The results of the CT Scan Thorax examination, axial slices with coronal and sagittal contrast sections showed the impression that currently there is no mediastinitis or abscess formation along the scanned mediastinum, according to the appearance of miliary tuberculosis with endobronchial spreading in both lung fields, accompanied by multiple lymphadenopathy in the right upper mediastinum especially in the right upper paratracheal, aortopulmonary zone, subcarinal, and right left hilar areas.

The results of the Culture and Antibiotic Sensitivity Test of Sputum found:

- Organism: Klebsiella pneumoniae ssp. Pneumoniae, ESBL = +
- Isolated bacteria Klebsiella pneumonia ssp. Pneumoniae that are highly resistant especially to 3rd generation cephalosporins (suspected ESBL or AmpC Producer) and Candida albicans from patient sputum specimens mixed with saliva
- Significant depending on clinical and markers of infection
- Amikacin and followed by Mikafungin can be given as a treatment option
- Do contact precautions

Discussion

Submandibular abscess is the most common deep neck abscess where the incidence of submandibular abscess is more found in men than women. In a study conducted by Paolo Rizzo it was found that the incidence of submandibular abscess in men (51.9%) and women (48.1%), aged between 12 to 96 years. In this case, it occurred in a 51-year-old man.

Symptoms in this patient are swelling and pain under the left jaw accompanied by fever and trismus. This is in accordance with what was stated by Rana *et al*, [6] that symptoms such as swelling and pain are the main complaints of most of the deep neck abscesses. Of the 50 patients with deep neck abscess, 96% of patients complained of swelling, 92% of patients complained of pain and 66% of patients complained of fever. [6]Paolo Rizzo expressed clinical symptoms that often occur in patients with submandibular abscess is a swelling of the neck (98.8%) and difficulty in swallowing (35.8%). Other symptoms that are often found are 23.5% of patients complaining of fever, 24.7% complaining of pain and 17.3% of patients complaining of trismus. [12] According to research conducted by Ardehali MM *et al*. Besides being caused by dental infections, infections in the submandibular space can be caused by lymphadenitis, trauma, or surgery *(iatrogenic)* and can also be a continuation of other deep neck space infections. In this patient, the patient previously had lumps in the lower left jaw, *multiple*, solid, with the largest size 3x3x3 cm, and an aspiration biopsy was performed with the results of inflammation/chronic inflammation experienced by the patient since about 2 weeks ago. [18]

Paolo Rizzo stated that the laboratory examination can be found leukocytosis. This patient had leukocytosis with a total of 14,050/µL at the first visit and 25,340/µL at the second visit. Paolo Rizzo also stated that in 37% of patients with submandibular abscess there was an increase in the number of leukocytes above 12,000/µL. [12] Serial leukocyte counts are a good way to assess response to therapy. [1, 14] In this patient the leukocyte count gradually decreased to near normal at the last examination, which was 5240/µL.

From the physical examination and supporting examinations that have been conducted by patient, the patient was diagnosed with a right submandibular abscess, and in its development, this patient was found to have HIV stage IV WHO pre HAART. Most causes of deep neck abscess are polymicrobial including anaerobic and aerobic

bacteria. However, in this patient there was no bacterial growth in the culture results. This can be caused because The specimen is in the form of pus which is inadequate for bacterial culture examination because it only contains dead bacteria and necrotic tissue. In a study conducted by Paolo Rizzo, there were 39 patients whose bacterial culture results did not find bacterial growth, and only in some cases the growth of anaerobic bacteria was found. A number of factors can affect the results of microbiological examinations, namely previous administration of antibiotics, administration of high doses of intravenous antibiotics before drainage, improper collection of specimens, and difficulties in anaerobic culture. [12]

This patient was given intravenous empiric antibiotic therapy with ceftriaxone 1 gr every 12 hours intravenously and metronidazole 500mg every 8 hours intravenously. This is in accordance with a study conducted by Shih-Wei Yang *et al*, where it was found that the administration of a combination of ceftriaxone and metronidazole antibiotics was the recommended antibiotic therapy for the management of deep neck abscesses. The coverage of this antimicrobial spectrum against aerobic and anaerobic bacteria was 70.79%. [20] In this case, the patient was responsive to therapy, it was known that the patient's complaints were improving, there was no pus production and a decrease in the number of leukocytes.

Evacuation of the abscess is carried out under local anesthesia where the incision is made in the most fluctuating area. [3] Blunt dissection with a hemostat is carried out into the abscess cavity and then drainage of the abscess is performed. After that, the abscess cavity was irrigated with physiological saline solution and a drain was installed. [4, 12] Done dilation, wound toilets and daily replacement of drains were performed on the abscess incision wound until swelling under the jaw and chin disappeared and pus was no longer there. This is consistent with the results of a study by Rana *et al* who found that most of the patients with deep neck abscess needed incision and drainage (78% of patients) and only 22% of patients improved with only medical therapy.

Conclusion

It has been reported a 51-year-old male patient with a diagnosis of sinistra submandibular abscess with HIV infection stage IV pre HAART, in this patient previously had a history of lymphadenitis and a history of needle biopsy in the submandibular before the formation of an abscess in the sinistra submandibular, in this case it did not experience extension to the other potential spaces and on treatment showed improvement after incision drainage of the abscess and receiving medical therapy.

References

1. Gadre AK, Gadre KC. Infections of the deep spaces of the neck. In: Bailey BJ, Johnson JT,editors. Head & neck Surgery Otolaryngology. 4th ed. Philadelphia: Lippincott Williams & Wilkins, 2006, 665-82.
2. Rosen EJ. Deep neck spaces and infections. Grand rounds resentation, UTMB, Dept. Of Otolaryngology, 2002.
3. Fachruddin D. Abses leher dalam. Dalam: Iskandar M, Soepardi AE editor. Buku ajar ilmu penyakit telinga hidung tenggorok. Edisi ke 6. Jakarta: Balai Penerbit FKUI, 2007, 185-8.
4. Rahardjo P. Infeksi Leher Dalam. Makasar: Graha Ilmu, 2013, 2-16.
5. Anonim. (2016, Juni 21-last update), "Submandibular space", Available: https://en.wikipedia.org/wiki/Submental space (Accessed: 2016, September 12).
6. Rana K, Rathore PK, Wadhwa V, Kumar S. Deep Neck Infections: Continuing Burden in Developing World. International Journal of Phonosurgery and Laryngology,2013:3(1):6-9.
7. Das R, Manickam A, Saha j, Basu s. Unilateral Marginal Mandibular Nerve Palsy in a Case of Submandibular Space Abscess – A Rare Case Report with Review of Literature. Global Journal of Medical Research: J Dentistry and Otolaryngology,2015:15(1):5-7.
8. Stong BC, Johns ME, Johns III MM. Anatomy and Physiology of the Salivary Glands. In: Bailey BJ, Johnson JT, Newlands SD, editors. Head and Neck Surgery - Otolaryngology. 4th ed. Philadelphia: Lippincott Williams & Wilkins, 2006, 518-25.
9. Christian JM. Odontogenic Infections. In: Flint PW, Haughey BH, Lund VJ, Niparko JK, Richardson MA, Robbins KT *et al*. editors. Cummings Otolaryngology Head and Neck Surgery. Philadelphia: Mosby, Inc, 2010, 177-90.
10. Fragiskos FD. Odontogenic Infections. In: Fragiskos FD, editor. Oral Surgery. Berlin:Springer-Verlag, 2007, 232-4. 22
11. Hesley I, Lumintang N, Limpeleh H. Profil Abses Submandibula Di Bagian Bedah Rs Prof. Dr. R. D. Kando Manado Periode Juni 2009 Sampai Juli 2012. Bagian Bedah BLU RSU Prof. dr. R.D. Kandou Manado, 2013, 3-4.
12. Rizzo P, Mosto MCD. Submandibular Space Infection: A Potentially Lethal Infection. International Journal of Infectious Diseases,2009:13:327-33.
13. Rogers J, McCaffrey TV. Inflammatory Disorders of the Salivary Glands. In: Flint PW, Haughey BH, Lund VJ, Niparko JK, Richardson MA, Robbins KT, *et al*., editors. Cummings Otolaryngology Head & Neck Surgery. 5th ed. Philadelphia: Mosby, Inc, 2010, 1151-3.
14. Oliver ER, Gillespie MB. Deep Neck Space Infections. In: Flint PW, Haughey BH, Lund VJ, Niparko JK, Richardson MA, Robbins KT, *et al*. editors. Cummings Otolaryngology Head and Neck Surgery. 5th ed. Philadelphia: Mosby, Inc, 2010, 201-8.

15. Lawson W, Reino AJ, Westreich RW. Odontogenic Infections. In: Bailey BJ, Johnson JT, Newlands SD, editors. Head & Neck Surgery - Otolaryngology. 4th ed. Philadelphia: Lippincott Williams & Wilkins, 2006, 616-28.
16. Parhiscar A, Har-El G. Deep Neck Abscess: A Retrospective Review of 210 Cases. Ann Otol Rhinol Laryngol,2001:110:1051-4.
17. Mazita A, Hazim MYS, Shiraz MAR, Putra SHAP. Neck abscess: five year retrospective review of hospital university kebangsaan Malaysia experience. Med J Malaysia,2006:61(2):151-6.
18. Anonim. (2016- last update),"abses submandibula ", Available: http://www.indodentist.com/abses-submandibula (Accessed: 2016, Septemper 9).
19. Lee YQ, Kanagalingam J. Bacteriology of deep neck abscesses: a retrospective review of 96 consecutive cases. Singapore Med J,2011:52(5):351-5.
20. Yang W, Lee H, See C, Huang H. Deep Neck Abscess: An Analysis Of Microbial Etiology And The Effectiveness Of Antibiotics. Infection and Drug Resistance,2008:1:1-8.