ADVANCED NASOPHARYNGEAL CARCINOMA WITH NASAL POLYP: A MISDIAGNOSED CASE

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Abstract

Introduction: Nasopharyngeal carcinoma (NPC) is commonly misdiagnosed in the early stages, because it has multiple nonspecific signs and symptoms as well as a difficult anatomic site. Especially if there is a comorbid in the area around the nasopharynx, it will most likely be misdiagnosed. This results in a high mortality rate due to it being diagnosed in a later advanced stage. Therefore it is important for physicians to recognize early signs and symptoms of this case and know the differential diagnosis.

Case report: Reported a 58 year old male with history of recurrent nasal bleeding, accompanied by hearing problem and ear fullness. He also complained of a severe headache as well as the appearance of a left neck mass since a few months prior. During nasopharyngoscopy a gelatinous mass in the right nasal cavity and a nasopharyngeal mass extending to both nasal cavities was found. The biopsy results were polyp nasi Hellquist Type I and Undifferentiated Nonkeratinizing Carcinoma. CT with contrast showed the nasopharyngeal mass has extended intracranially. Patient was planned to undergo polypectomy followed by chemoradiation. Despite the tumor having radiosensitive properties, the prognosis and the survival rate are low because the patient came at stage IV.

Conclusion: Early sign and symptoms of NPC should be known by health workers so they can recognize and refer NPC at an early stage.

Article Info

Keywords:

Nasopharyngeal carcinoma, misdiagnosis, early detection, nasal polyp

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1. CASE REPORT

Nasopharyngeal carcinoma is commonly misdiagnosed during the early stages because it has nonspecific signs and symptoms. It is also located in the nasopharyngeal area which is difficult to assess for a physical examination. This results in an advanced stage diagnosis and a high mortality rate. Even though the tumor is radiosensitive, it still has a high morbidity. Around 60-85% of NPC patients already has cervical lymph nodes or distant metastasis at the time of diagnosis. This article reports an advanced nasopharyngeal cancer with a nasal polyp comorbid in which it further impedes diagnosis, especially at a primary health care facility. Therefore, further educating health workers is important.

Mr. W, 58 years old, came with complaints of nosebleed since 3 days ago. Nosebleeds appeared suddenly from both nostrils flowing to approximately half a starfruit glass per day and lasts about a few minutes and was quite disturbing. Complaints were accompanied by a chronic runny nose, sometimes accompanied by thick yellow or green snot or a blood line, a bad smell from the nose, and nasal congestion. Olfaction was slightly reduced and he was prone to sneezing when exposed to dust.

Complaints were also accompanied by hearing loss and aural fullness in both ears since 11 months prior. Complaints of aural discharge, tinnitus or pain from both ears were denied.

Patient also complained of a severe headache felt since 4 months ago. Double-vision, visual disturbances, hoarseness, feeling of thickness on the cheeks, dyspnea and dysphagia were denied.

A lump located at the left neck appeared around 2 months prior. Initially, the lump size was as big as a nut and it grew to approximately a chicken egg. The lump was painless. Lumps in other areas were denied.

A history of recurring nosebleeds since the previous 6 months was reported. There were no history of hypertension, Diabetes Mellitus and weight loss. History of similar diseases in the family was denied. Chronic cold history and asthma in the family were denied. There was history of eating salty fish since childhood and old smoking habits was recognized, the habit of drinking liquor is denied. History of sneezing, nasal congestion and runny nose when exposed to dust is recognized.

Picture 1. Examination of Neck Region

On general examination, it was found that the general condition was good BP 120/80 mmHg, pulse 80x/minute, RR 24x/minute, temperature 37.0°C. Examination of ear and throat were within normal limit. In the nasal cavity there was a blood clot, inferior turbinate were livid and hypertrophy was found in both nasal cavities, accompanied by a decrease in the right air passage. Examination of the face and cranial nerves was within normal limits. Then the neck examination obtained a mass on left neck at level II (upper jugular), the surface was smooth, mobile, hard consistency, no tenderness, with a size of 6cm x 3cm x 1cm.

Picture 2. A. Polyp in Right Nasal Cavity (red arrow) and Nasopharyngeal Mass (black arrow), B. Left Nasopharyngeal Mass (black arrow).

The patient was diagnosed with suspected nasopharyngeal carcinoma with right nasal polyp. Nasopharyngoscopy evaluation was performed per local anesthetic which found a gelatinous mass in the right nasal cavity and a reddish mass of the nasopharynx which has extended to both nasal cavities. Both masses were then biopsied.

Picture 3. CT Scan with contrast

Nasopharyngeal CT scan with contrast was obtained with impression that there was a thickening of both nasopharyngeal posterior wall extending to both sphenoid sinus, anteriorly infiltrating the nasal cavities, especially the right cavity, superiorly infiltrating intracranially through the cavernous sinus. Accompanied by both maxillary sinusitis and enlargement of the left neck node. Examination of chest x-ray and abdominal hepatobiliary ultrasound were within normal limits, no sign of metastasis.

Picture 4. Anatomy Pathology: A. Polyp B. Undifferentiated Carcinoma

The results of histopathological were obtained, with the conclusion that the preparation number A is Type I Hellquist Nasal Polyp and preparation number B is Nonkeratinizing Carcinoma, Undifferentiated type. In conclusion the patient was diagnosed with Undifferentiated Nasopharyngeal Carcinoma that had extended to intracranial with metastases to left neck lymph node T4N2Mx (stage 4A), accompanied by chronic rhinosinusitis with right nasal polyp. Patient was planned for a polypectomy and chemo-radiation.

2. DISCUSSION

Along with the increasing access to health services in Indonesia through the JKN (National Health Insurance) government program, even more cases of malignancy are found in the regions. Malignancy in ENT field especially nasopharyngeal cancer is still a case that is difficult to diagnose at an early stage, considering a number of symptoms and early clinical signs that are not specific. In addition anatomically, the position of the nasopharynx is very difficult to examine without using special equipment. Even some adequate equipment is still relatively expensive so not all health facilities in Indonesia are able to inspect it, especially first-level health facilities as the spearhead of JKN-based services.

Nasopharyngeal carcinoma is malignancy originating from the epithelium or mucosa and crypts that line the nasopharynx surface [1]. The initial lesion of malignancy lies in the Rosenmuller fossa, which is a squamous cell epithelium around the Eustachian tube, the lateral wall and roof of the nasopharynx, and the Eustachian tube area itself [3, 4].

Picture 5. Anatomic Site and Subsite of the Head and Neck, Nasopharynx Area [5].

The incidence of NPC in Indonesia is estimated at 6.2 cases per 100,000 population per year [6]. About 60% of malignant neck head tumors are NPC which ranks fifth of all malignancies after malignant cervical, breast, lymph node, and skin tumors [7]. Nasopharyngeal carcinoma can be found at all ages, but rarely under 20 years. The incidence of NPC starts to increase at the age of 20-24 years and is often found in the productive age of 30-59 years (around 80%) with a peak between 40-49 years [8]. NPC events are more common in men than women by comparison 2-3:1 [9]. The patient was a 58-year-old male, this patient was well suited to epidemiological profiles in most cases.

Nasopharyngeal carcinoma is a complex disease caused by the interaction of genetic, environmental, and chronic infections of VEB (Epstein Barr Virus) [10, 11]. Several studies in the population for decades found that the nasopharynx is susceptible to smoking/tobacco; smokers have an increased risk of NPC 30%-100% compared to nonsmokers. Incomplete combustion smoke particles from coal, wood, and other materials can also be deposited in the nasopharynx [11]. Marinated fish and other preserved foods contain large amounts of nitrosodimethylamine (NDMA), N-nitrosopyrrolidene (NPYR), and N-nitrosopiperidine (NPIP) which are the factors of NPC carcinogens. Salted fish exposure at an early age at high risk of NPC in South Chinese people [12, 13]. Primary EBV infection is common in early childhood, asymptomatic but produces a persistent virus throughout life. The EBV has a strong response to human lymphocytes and upper airway epithelium. Oropharynx is the primary location of infection and also viral replication. EBV infects primary B lymphocytes to form latent infections and cause proliferation [10, 11]. This patient was previously a smoker, and had history of consuming salted fish since childhood, because it is easily obtained around his home by the sea.

Symptoms of NPC are related to the anatomical location of the primary tumor and metastasis. Symptoms that often appear can be grouped into four categories, 1) Ear symptoms; 2) Nasal symptoms; 3) Symptoms of Neurology/Nerves, these symptoms are associated with cranial nerve involvement around 20%; 4) A painless lump in the neck found for more than 50% of NPC patients. Enlargement of the lymph nodes is usually in the upper part of the neck, according to the location of the tumor (ipsilateral), but not infrequently bilateral. Other symptoms can include general symptoms of malignancy such as weight loss and anorexia [10, 14]. Early symptoms of NPC are often not specific and missed, most patients come when there is a lump in the neck and are generally advanced stage [14]. From clinical examination on the patient, we found a number of symptoms related to NPC, there were symptoms of nose, ear, cranial nerve and neck. This patient experienced recurrent nosebleeds, hearing disorders and earfullness. Chronic complaints of rhinorea were accompanied by mucopurulent secretions, nasal obstruction and hyposmia. Some of these symptoms were not specific so the discovery during early case was difficult. On the other hand patient also suffer from chronic rhinosinusitis accompanied by a polyp which further obscures the initial symptoms of NPC. Then when the patient experienced a neck lump accompanied by recurrent nosebleeds, of course health workers think of the possibility of other diagnosis rather than just a chronic rhinosinusitis. The patient's neck lump was painless, ipsilateral and found on level II of the neck as most of the cases.

Examination of the primary tumor in the nasopharynx can be done by posterior rhinoscopy and nasopharyngoscopy. Examination with posterior

rhinoscopy is often found to be difficult because what is seen is only a picture or shadow on the glass. Nasopharyngoscopic examination with flexible fibroscope or rigid hopkins endoscope 00 and 300 is required [9, 15]. We chose the nasopharyngoscope examination using rigid hopkin 00 scope for better visualization.

Radiological examination is needed to obtain information on the presence of tumors, expansion, and recurrence after therapy. Radiological examination for nasopharyngeal carcinoma consists of plain skull, CT scan, MRI, and PET scan. CT scan has the advantage and high diagnostic value of distinguishing various densities in the nasopharynx and assessing the extent of the tumor, spreading to the neck lymph nodes, bone destruction and intracranial spread [10, 15, 16]. We performed head and neck CT scan with contrast on this patient focused on the nasopharyngeal area, there's no allergy incidence due to the substance.

Definitive diagnosis of NPC is based on examination of tumor tissue in the nasopharynx (found malignant cells) obtained from tissue biopsy results. Patients who show positive serological results, but negative biopsy still cannot be considered to suffer from NPC and are not allowed to undergo radiotherapy. Such patient must be closely observed. There are several types of methods for histology and cytology examination, such as biopsy, washing, suction, and sweeping ("brush"). For small nasopharyngeal tumors or residual tumors, a biopsy technique with nasopharyngoscopy is more accurate because the sensitivity of this method is 95% [17]. We performed a direct nasalendoscopy for evaluation of the nasal cavity and nasopharynx area, followed by biopsy because there was a mass on nasal cavity and nasopharynx. This technique is carried out by local anesthetic, it is more accurate with light sources and monitors, and uses a large enough cunam (Takahashi or Blakesley forceps) so that it can be directed to a place that is suspected correctly. Biopsy is done through the nose (transnasal).

The World Health Organization (WHO) divides the NPC into three types. Type I is squamous cell carcinoma with good to moderate keratinization and produces a lot of keratin inside and outside the cell. Type II is good and medium differentiated squamous cell carcinoma without keratinization. It often resembles a picture of transitional cell carcinoma. Type III is undifferentiated NPC, also known as anaplastic type and poorly differentiated [18, 19]. This type of carcinoma has the ability of invasion and metastasis compared to other types, closely related to lymphoid tissue called lymphoepithelioma [9]. WHO type III is the most frequent and endemic histopathology type, especially in Southeast Asia [7]. This patient biopsy result show Type III nasopharyngeal carcinoma, an undifferentiated NPC, as the most frequent type found in all cases.

From the CT scan result, we found that the primary tumor has infiltrated intracranially through the cavernous sinus. Then there is metastasis to the regional area marked by enlargement of neck node level II (upper jugular) where the largest dimension is about 6 cm. The presence of intracranial involvement and regional lymph node involvement shows the type III carcinoma invasion ability. In determining distant metastases, only lung and liver examination and retroperitoneal lymph nodes were examined, but involvement of bones not performed due to limited facilities. Clinical stage in NPC is very important for therapy and evaluation of therapy. TNM assessment stage classification system (tumor size, involved lymph node, metastasis): primary tumor (T), regional lymph node (N), metastasis (M). According to the American Joint Committee on Cancer (AJCC) 2017; T4 NPC is a tumor that has an intracranial extension, there is involvement of the cranial, hypopharyngeal, orbital, parotid glands, and/or extensive infiltration of connective tissue across the lateral surface of the lateral pterygoid muscle. For cervical lymph node (LN) involvement, N1 is unilateral metastasis and or unilateral or bilateral retropharyngeal LN metastasis, <6 cm in size, above the caudal border of the cricoid cartilage, while M0 has no distant metastases. The division of stages for NPC is: stage 0 (Tis N0 M0), stage I (T1 N0 M0), stage II (T0, T1 N1 M0, T2 N0, N1 M0), stage III (T0, T1, T2 N2 M0, T3 N0, N1, N2 M0), Stage IVA (T4 N0, N1, N2 M0, all T N3 M0), stage IVB (all T, all N M1) [5]. We concluded that the stage of his tumor is IVA (T4N1M0).

Picture 6. NPC Management Algorithm [5].

Radiotherapy is the main choice, especially for undifferentiated NPC (WHO type III), because it is radiosensitive. Radiotherapy is performed at an early stage (stage I and II). Indications for chemotherapy in NPC include advanced stages (stage III and IV), accompanied or suspected distant, persistent, and recurrent metastases [10, 20, 21]. Advanced NPC management (stage III and IV) is combination chemotherapy with radiotherapy. Chemotherapy can be given before, during, or after radiation called neoadjuvant, concurrent, and adjuvant chemotherapy. Current recommendations for using cisplatin, 5-fluorouracil, taxane, gemcitabine, vinorelbine chemotherapy [20]. Based on the algorithm, patients are planned for chemoradiation therapy with a choice of concurrent chemoradiation techniques followed by adjuvant chemotherapy or induction chemotherapy followed by chemo/radiotherapy. But the prognosis of this patient was not very good, we can see in the following information.

The prognosis of patients with NPC depends on the clinical stage when the diagnosis is made. More than 80% of therapeutic success occurs in the early stages (I-II) and the success rate is reduced by 40% if the patient is found at an advanced stage (III-IV) [6]. Five-year survival rate at stage I, II, III, and IV obtained around 72%, 64%, 62%, and 38% [22].

3. CONCLUSION

It was reported that a 58-year-old male patient diagnosed with stage 4A nasopharyngeal carcinoma and chronic rhinosinusitis with nasal polyp, was planned for advanced stage management. Nasopharyngeal carcinoma is often undiagnosed at an early stage because the symptoms are not specific and the examination of the nasopharynx is difficult. The presence of comorbidities in the area around the nasopharynx can obscure the clinical symptoms of this malignancy, such as chronic rhinosinusitis with polyps, so strengthening early detection in the community as well as in primary and advanced health facilities is important.

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