

Case Report

Epidural spinal cord compression metastasis from nasopharyngeal carcinoma: report of a rare case

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ABSTRACT

Nasopharyngeal carcinoma (NPC) is one of common tumours that found in Indonesia. NPC metastases on central nervous system (CNS) are rare case. Quick diagnose and proper therapy have greatly affected on prognosis of patient outcomes. Here we reported a case of NPC metastasis to epidural space in a 46-year-old woman with therapy approach using 3 scoring systems specifically Abdurahman score, Tokuhasi score, and Tomita score and patient has a good outcome.

Keywords: Epidural spinal cord compression metastasis, Nasopharyngeal carcinoma, Abdurahman scoring system, Tokuhasi scoring system, Tomita scoring system, Laminectomy debulking

INTRODUCTION

Nasopharyngeal carcinoma (NPC) or lymphoepithelioma is squamous cell carcinoma ad nasopharyngeal epithelium.¹ NPC number in worldwide is 1/100.000 and is an endemic in China and quite common in southeast Asia like Singapore, Malaysia, Vietnam, Taiwan.² NPC is frequent to be found in Indonesia 6,2/100.000, it's place in fourth order after cervical cancer, breast cancer, and skin cancer.³ The most common NPC metastasis is bone, lung, and liver.⁴ NPC metastasis to central nervous system (CNS) is a rare case.⁵ Early diagnosis and right prompt treatment are play important role in determine prognosis morbidity and mortality patient.⁶ We present a case of epidural spinal cord compression metastasis (ESCCM) from NPC with pathological confirmation with histopathology analysis with radiotherapy and surgery treatment.

CASE REPORT

46-year-old woman came with weaknesses of the lower limbs. Patients were diagnosed with nasopharyngeal

carcinoma since 4 months ago with T4N0M0 stage, and had undergone 33 times radiotherapy with cobalt and onetime chemotherapy using zometa (zoledronic acid).

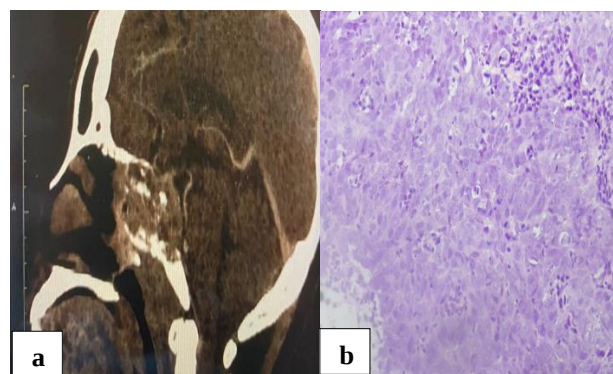


Figure 1: (a) CT scan sagittal view nasopharyngeal carcinoma, and (b) histopathology NPC shows undifferentiated carcinoma (WHO type 3).

Physical examination shows, motoric strength of lower limb 0/1, and a sensory decrease at level T5, physiological

reflexes +/+, pathological reflexes not found, good proprioceptives, and automomous still in good condition. We found narrowing by a mass at T5-T7 on magnetic resonance imaging (MRI) examination. A mass can be seen in the vertebral canal as high as T5-T7 On T1 weighted.

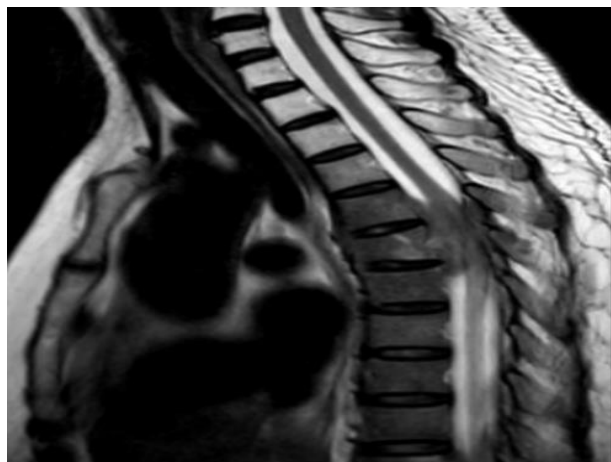


Figure 2: T1 weighted MRI saggital view.

An assessment was carried out using the Abdurrahman score, and the patient got total score 25. This indicates that the patient needs surgery. Based on Tomita score assessment, it was found that the patient had a total of 6 points. And the assessment with the Tokuhasi score, the patient gets a total of 6 points. From the assessment with Tomita score, the patient is indicated to undergo debulking therapy. Meanwhile, based on calculations using the Tokuhasi score, patients can be given conservative and palliative therapy. The prevalence of patient life expectancy is 12-24 months according to Tomita Score calculations and less equal to 6 according to the Tokuhasi score calculation.^{7,8}

Table 1: Abdurrahman score.

Parameter	Point
Subjective assessment	
Degree of pain	3
Pain related movement	5
Objective assessment	
Number of local extension	2
Ulceration	5
Phatologic fracture	0
Physical status	10
Operability of the tumour	1
Total	25

Patient is immediately operated on after improvement of the general state. Before the surgery, a tracheostomy is performed on the patient to patent the airway, because the patient cannot open the mouth. Spinal cord compression release is performed by laminectomy debulking and installing rood on the T4, T5, T7, and T8 vertebrae.

Histological specimens are also collected during the operation process.

Table 2: Tomita score.

Parameters	Point
Growth behaviour of the primary tumour	4
Visceral metastases	0
Bone metastases	2
Total	6

Table 3: Tokuhasi score 2005.

Prediction factor	Point
General condition (KPS)	0
Number of extra spinal bone metastases foci	2
Number of metastases in the vertebral body	0
Metastases to the major internal organs	2
Primary site of the cancer	2
Spinal cord palsy	0
Total	6

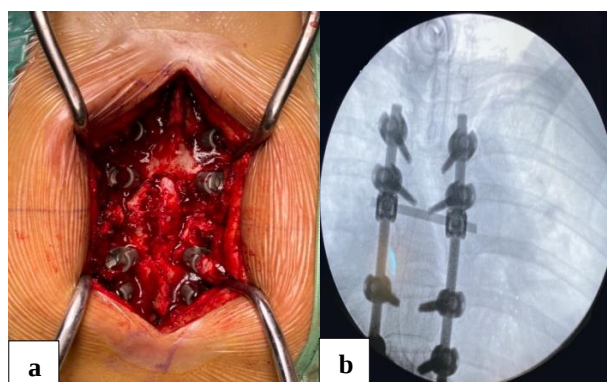


Figure 3: (a) Laminektomi debulking and installation of rood T4-5 and T7-8, and (b) C-arm installation rood T4-5 and T7-8.

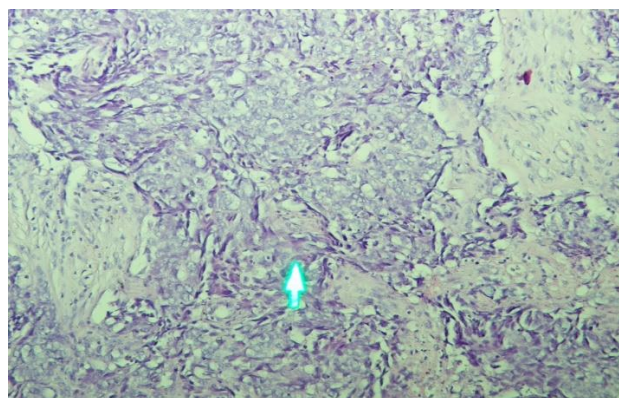


Figure 4: Histologic examination of the operation specimen shows an undifferentiated carcinoma metastasis.

Physiotherapy is routinely carried out every day by moving all the lower extremity joints to inhibit atrophy and prevent contractures, tilting the patient to the right and left to reduce the risk of decubitus, and training the patient to sit down. One month after the surgery, patient's sensory improvement and the patient doesn't feel tingling anymore, although there has been no improvement in patients motoric. An assessment of the quality of life was carried out using the SF-36 questionnaire. And the results of the assessment found that the quality of life of the patient improved.

Table 4: SF-36.

Parameters	Before surgery (%)	1 month after surgery (%)
Physical function	0	0
Role limitation due to physical health	0	0
Role limitations due to emotional problems	0	0
Energy/fatigue	5	20
Emotional well-being	28	36
Social functioning	12,5	25
Pain	0	32,5
General health	10	20
Health change	0	0

DISCUSSION

NPC metastasis is one of the causes of therapy failure. The main pathway of NPC metastasis is to be through hematogenous and lymphatic, but direct invasion at the base of the cranial can open a pathway to the CNS metastase.⁹ The most common metastases of NPCs are in the bones, lungs, and liver, while metastases of NPC to CNS are considered to a very rare case.¹⁰

Epidural metastases range are about 5% of the entire metastatic predilection. With cervical metastatic predilection 15%, thorakal 60%, and lumbosacral 25%.¹¹ Metastases tumour into the epidural space are suspected through two ways, 15% occurs from tumor growth in paravertebrae that grow into the spinal canal through the intervertebrate foramen, and the 85% remaining through indirect invasion by blood vessels. The tumour invades the bone and spreads to the epidural space.¹¹

ESCCM symptoms can be back pain, it can be local pain according to the height of the vertebral metastasis, and also can be radiculopathy pain in both bilateral and unilateral. ESCCM that invades cervix and lumbosacral usually causes unilateral radiculopathy pain, and bilateral radiculopathy if when it invades thorakal.¹¹ In these patients, metastasis was found at thoraca so she experienced bilateral radiculopathy pain. Pain is felt at night and when the patient is in the supine position, this is due to back stretching when the patient is in that

position.^{11,12} In addition, weakness of the limbs is also one of the symptoms that experienced.¹² Weakness of the limbs is associated with the patient's walking ability. 50-68% of patients are unable to walk when ESCCM is established.^{12,13} Sensory disorders are also found in patients, sensory disorders usually begin from distal. Autonomic disorders are also one of the symptoms experienced in ESCCM.¹¹⁻¹³

Radiotherapy is one of the main choices for handling NPC that has high radiosensitive. When metastasis is found, chemotherapy is also the priority choice of therapy.¹⁴

In NPC patients, trismus can occur resulting from both the symptoms of NPC itself and can be the side effects of radio therapy.^{15,16} This patient had symptoms of trismus which required the patient to have a tracheostomy to maintain the airway during the surgical process.

The aim of therapies are to reduce pain, paralysis, and improve the quality of the rest of patient's life. Giving therapy as early as possible has greatly affects on prognosis of the patient. Scoring can be used as an estimate of the patient's life expectancy and the limits of the therapy that will be given to the patient. There are several scoring systems that can be used, including Tokuhasi, Tomita, Baur, Linden, Rades, and Katagiri.¹⁷

In this case report, the Tokohita scoring and Tomita scoring scoring systems are used, arguing that Tokohita Scoring has the highest difficulty compared to other scoring systems.¹⁸ Meanwhile, Tomita Scoring is used as a comparison to evaluate the indications of surgery.

However, length of life prediction patients compares between scoring and reality is 90% different, because there are still many things that can affect the length of life expectancy in ESCCM patients in addition to the things that are taken into account in scoring.¹⁸

The patient's quality of life was calculated using the SF-36 questionnaire, to compare the patient's quality of life before and after treatment. From the comparative calculation before and after surgery, we found that the patient's quality of life improved.

CONCLUSION

ESCCM from NPC is a rare case and absolutely can worsen a patient's quality of life. Diagnosing and providing treatment quickly and appropriately is an important thing to improve prognosis. Using scoring such as Tomita scoring and Tokuhasi scoring is important to determine the right therapy to improve the quality of life of patients.

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