Nasopharyngeal Tuberculosis Mimicking Recurrence Nasopharyngeal Carcinoma: A Case Report

Mohd Razi Mat Saud[1], Norhafiza Mat Lazim[1], Zaleha Kamaludin[2], Sharifah Emilia Tuan Sharif[2]

[1]*Department of Otorhinolaryngology-Head and Neck Surgery (ORL-HNS), Universiti Sains Malaysia, Kelantan, Malaysia*
[2]*Department of Pathology, School of Medical Sciences, Universiti Sains Malaysia, Kelantan, Malaysia*

ABSTRACT

Tuberculosis (TB) is a global epidemic in the tropical countries. The head and neck region is less commonly affected by TB and the nasopharyngeal TB has been rarely reported in literature. Here, we report a case of a male with a mass and obliteration of the fossa of Rosenmuller that mimicked recurrent nasopharyngeal carcinoma. Histopathological examination revealed tuberculosis of nasopharynx. The patient was treated with anti-tuberculous drugs and improved. Nasopharyngeal TB with a proper treatment and follow up shows good prognosis.

Keywords: Nasopharyngeal Carcinoma; Tuberculosis; Radiotherapy; Chemoradiation

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Correspondence to: Dr Mohd Razi Mat Saud

Address: Department of Otorhinolaryngology-Head and Neck Surgery (ORL-HNS), Universiti Sains Malaysia, Kelantan, Malaysia

E-mail: razes2013@gmail.com

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INTRODUCTION

Ten percent of the tuberculosis (TB) infections are in the head and neck region of which only 1% occurs in nasopharynx area [1]. The commonest otorhinolaryngology (ORL) cases of tuberculosis were tuberculous laryngitis [2] and nasopharyngeal tuberculosis occurred in 75% of pulmonary tuberculosis cases prior the usage of anti-tuberculous drugs [3].

Nasopharynx is a rare site of TB infection. Elderly with underlying malignancy who underwent chemoradiotherapy are likely to suffer from TB infection. Importantly, presentation of nasopharynx TB may mimic nasopharyngeal carcinoma (NPC). The gold standard diagnosis is by tissue biopsy. Nasopharyngeal TB shows good prognosis in patients who adhere to medical therapy.

CASE REPORT

A 62-year old man presented to the ORL clinic with complaints of right nasal block for two weeks. He had no prolonged cough, no neck swelling, no epistaxis, no hemoptysis, and no double vision. There was no history of contact with TB patient, fever, night sweats or loss of weight. Two years ago, he was diagnosed with a stage II (T1N1M0) undifferentiated NPC of WHO type III. Total radiation dose of 70 Gray was delivered to the primary tumor and 50 Gray to the neck lymph nodes, concurrently cisplastin was given every week for 5 weeks. A year later, he had a recurrent NPC with metastasis to the liver. Another six cycles of carboplatin plus 5-fluorouracil (5-FU) were commenced and he responded well. However, a few months later, he came back to the clinic with the above symptoms.

On examination of the nasal cavity, there was no mass or bleeding. Nasoendoscopy (Figure 1) revealed obliteration of the right fossa of Rosenmuller and the adenoid was not enlarged. There was no palpable cervical lymph node and no tonsillar hypertrophy. The tympanic membranes were intact bilaterally, and the lungs were clear.

Erythrocyte sedimentation rate (ESR) was 18 mm/hour. Sputum acid-fast bacillus (AFB) stain and mantoux test were negative. Chest X-ray was clear. Computed Tomography (CT) scan of the paranasal sinus (Figure 2) revealed right lateral nasopharynx fullness. It caused obliteration of the right fossa of Rosenmuller and the right eustachian tube. Superiorly, the inferior wall of the sphenoid sinus was eroded with minimal soft tissue density likely to present infiltration. The adjacent clivus bone also appeared irregular and sclerosed. No new lung nodule or pleural base nodule was noted. He was suspected to have another recurrence of NPC hence biopsy was taken from the nasopharynx. Biopsy of the right fossa of Rosenmuller (Figure 3) showed super-

-ficial and fragmented tissue composed of respiratory epithelium with scanty stroma, fragmanted fibrocollagenous tissue and blood clots. There were foci of vague epitheloid granuloma formation, composed of aggregates of epiheliloid cells mixed with lymphocytes. Ziehl-Neelsen stain was positive for acid test bacilii. There was no evidence of malignancy.

Based on the clinical, imaging and histopathological findings, he was diagnosed as nasopharyngeal TB and was treated with ethambuthol, rifampicin, isoniazid, pyrazinamide for 6 months. He responded well to the treatment.

DISCUSSION

In 2015, there were 10.4 million TB cases worldwide [4] and the incidence in the Southeast Asia region was reported as 4.74 million new cases of TB [5]. According to one estimate, TB treatment prevented 49 million deaths worldwide between 2000 and 2015 [5].

There are few mechanisms for development of TB in an oncologic patient. These include a decrease in local infection barriers at the site of cancer and/or augmented susceptibility attributable to immunosuppression [6]. In this case, the patient's chemotherapy regime immunosuppressed the body and made patient susceptible to infections such as TB. To the best of our knowledge, there was no previous reported recurrence NPC patient who developed nasopharyngeal TB. In addition, radiotherapy also causes immunosuppression through peripheral reduction of lymphocytes and changes in the immune cellular balance, namely, B cells, T cells, and natural killer cells [6].

Clinical presentation of nasopharyngeal TB include cervical lymphadenopathy (the commonest), nasal obstruction, and hearing loss due to secretory otitis media [7]. Other presenting symptoms are nasal discharge, headache (less common), weight loss, fever, epistaxis, otalgia, tinnitus, postnasal drip, night sweat, diplopia, and cranial nerve palsy [3, 7-9]. Nasopharynx examination will reveal either nasopharyngeal mass, an irregular surface or ulcerations [3].

The differential diagnoses of nasopharyngeal TB include NPC, lymphoma, Wegener's granuloma, sarcoid, syphilis, fungal infection, polyarteritis nodosa, squamous cell carcinoma, lymphoepithelial tumors, anaplastic carcinomas, amelanotic melanoma, rhabdomyosarcoma, and extramedullary plasmacytoma [8].

In nasopharyngeal TB, CT scan image demonstrates either a bulky mass, a lobulated mass, or irregular thickening of the soft tissue of nasopharynx and on MRI, it shows either as a polypoidal mass of the adenoids or as diffuse thickening of the mucosal wall of the nasopharynx [3]. Furthermore, the presence of necrosis and striped pattern in nasopharyngeal lesions, site predilection, less invasion of regional structures and central necrosis with the characteristic peripheral rim enhancement of cervical lymphadenopathy may suggest the diagnosis of nasopharyngeal TB [8]. It is suggested that a small nasopharyngeal lesion with necrosis could be a sign of nasopharyngeal TB [8].

In addition to CT scan and MRI, narrow band imaging (NBI) is useful to distinguish malignant and non-malignant nasopharyngeal lesion based on superficial microvascular pattern. In malignant lesions it will reveal a dilated, bifurcated, elongated and mildly irregular vascular pattern (type III) or there will be earthworm-like distortion with a very asymmetrical diameter or vessel course (type IV). In contrast, those with thin, short, sparse blood vessels and are found in the space among the lymphoid follicles (type I) or vessels with moderate diameter and length with a regularly reticulate micro-vessel pattern (type II) are likely to be benign [10].

Positron emission tomography (PET) scan also play a role to differentiate between TB and malignancy. In inflammatory or infectious tissues, fluorodeoxyglucose (FDG) uptake will take about 60 min to achieve its peak from the time of injection, but then it steadily decreases with time. Conversely, in malignant lesions, the uptake of FDG will be lasting for several hours and only malignant tissues show high uptake as compared to TB [11]. In this case, the patient did not undergo NBI and PET scan because the facilities are not available in our centre.

Treatment of nasopharyngeal TB is 2 months intensive phase of ethambutol, isoniazide, pyrazinamide and rifampicin followed by 4 months maintenance phase of ethambutol, and isoniazide [12]. Nasopharyngeal tuberculosis shows a good prognosis with adherence to medical therapy and no cases of therapeutic failure and resistance to anti-tuberculous drugs has been found [1]. To the best of our knowledge, this is the first case reported in literature.

CONCLUSION

In a NPC patient who presents with symptoms of

Figure 1: Nasoendoscopic examination showed hyperaemic mass with obliteration of FOR as indicated by blue arrow

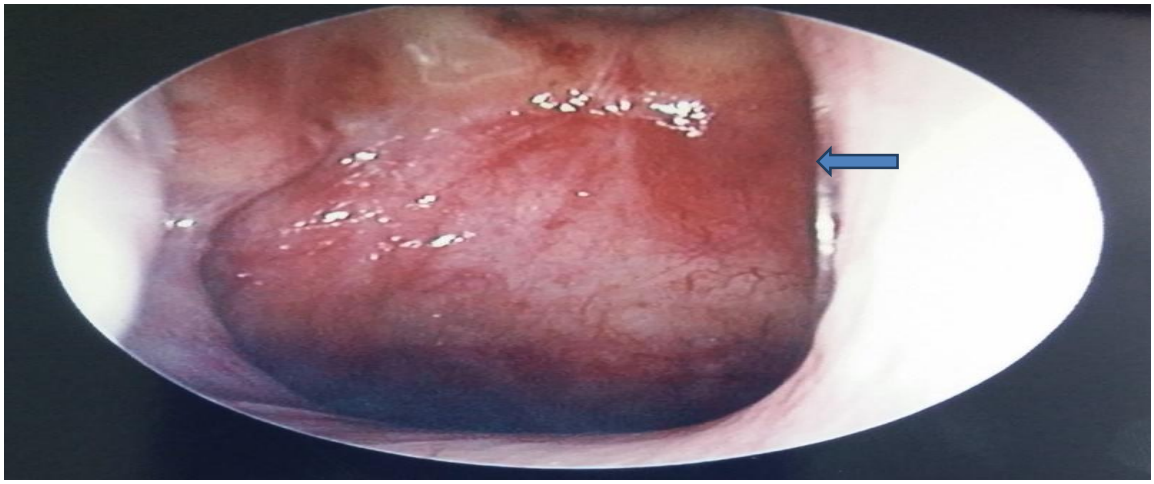
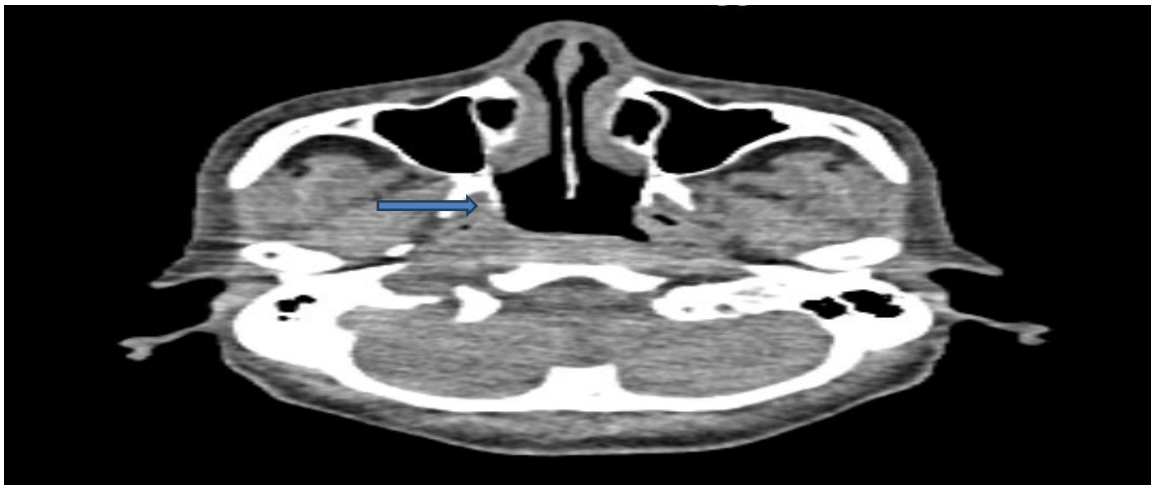


Figure 2: Computed tomography scan of paranasal sinus showed mass in right nasopharyngeal area with obliteration of FOR and eustachian tube as pointed by blue arrow



recurrence, nasopharyngeal TB should always be considered in the differential diagnosis and repeated biopsy should be considered. It is crucial to rule out either the recurrent tumour or another pathology, as the treatment approach will likely be different.

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Figure 3(a) (H&E): Histopathological examination of right fossa of Rosenmuller tissue display Foci vague epithelioid granuloma formation (arrow) (x40)

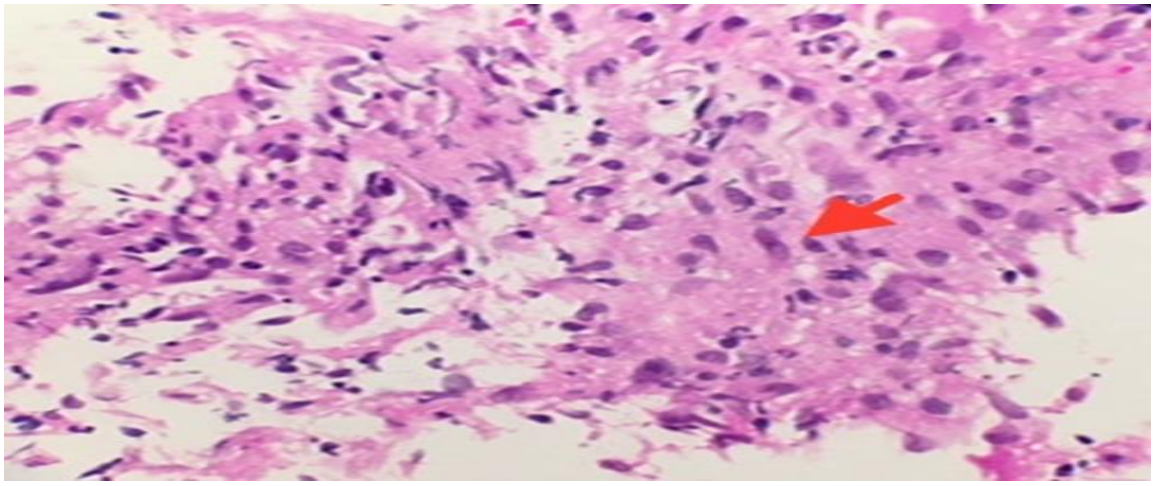

Figure 3(b)(H&E): Acid fast bacilli (yellow arrow) highlighted by positive Ziehl-Neelsen stain under oil immersion x100 objective

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