IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 25, Issue 2 Ser. 3 (February. 2026), PP 46-50
www.iosrjournals.org

Facial Nerve Palsy Secondary To Tuberculous Cold Abscess: A Rare Case Report

M. G. Rajaram, Assadi Rekha, K. Sivaprakasam, And Dhastagir Sultan Sheriff
Department Otorhinolaryngology,
Department Of Surgery, Anna Gowri Medical College, Puttur, Andhra Pradesh, India
Anna Medical College, Mauritius

Abstract
Tuberculosis remains a major public health problem in India, with extrapulmonary tuberculosis increasingly presenting with atypical manifestations. Tuberculous lymphadenitis with cold abscess formation is common; however, facial nerve palsy secondary to compression by a cold abscess is exceptionally rare.
We report the case of a 52-year-old male with poorly controlled diabetes mellitus who presented with a painless, progressively enlarging swelling involving the left submandibular, facial, and suboccipital regions, associated with facial asymmetry. Clinical examination revealed paresis of the mandibular branch of the left facial nerve. Imaging demonstrated extensive necrotic cervical lymphadenopathy with cold abscess formation causing compression of adjacent soft tissues. Fine-needle aspiration cytology and biopsy findings were consistent with tuberculous lymphadenitis. The patient was treated with surgical incision and drainage, antitubercular therapy, strict glycemic control, and supportive care, resulting in significant clinical improvement and gradual recovery of facial nerve function.
Facial nerve palsy due to compression from a tuberculous cold abscess is an extremely uncommon presentation. In tuberculosis-endemic regions, a high index of suspicion is essential when evaluating painless cervical swellings associated with facial nerve involvement. Early diagnosis and prompt intervention are crucial to prevent permanent neurological deficits.

Keywords: *Tuberculous lymphadenitis; Cold abscess; Facial nerve palsy; Extrapulmonary tuberculosis*

Date of Submission: 09-02-2026 Date of Acceptance: 19-02-2026

I. Introduction

An estimated 10.7 million people globally developed tuberculosis (TB) in 2024, corresponding to an incidence of 131 cases per 100,000 population. Among all incident TB cases, 5.8% occurred in people living with HIV. In 2024, most TB cases were reported from the WHO regions of South-East Asia (34%), the Western Pacific (27%), and Africa (25%), with smaller proportions from the Eastern Mediterranean (8.6%), the Americas (3.3%), and Europe (1.9%).

India's 2025 TB report, largely based on the WHO Global Tuberculosis Report 2025, demonstrates significant progress, with a 21% reduction in TB incidence (from 237 to 187 per lakh population in 2024) and a 25% decline in mortality. Despite these achievements and a treatment coverage of 92%, India continues to bear the world's highest TB burden, accounting for 25% of global cases, and a substantial proportion of drug-resistant TB, including 32% of global multidrug-resistant TB cases, highlighting the need for continued focus on MDR-TB and vulnerable populations.[1]

Although the lungs are the most commonly affected site in TB, extrapulmonary involvement is well recognized. According to the Global Tuberculosis Report 2020, extrapulmonary tuberculosis (EPTB) constituted 16% of the 7.5 million reported TB cases globally and 19% in South-East Asia.[2] These figures likely underestimate the true burden, as a considerable proportion of cases remain undiagnosed or unreported. Cervical lymph node involvement with cold abscess formation is a common presentation of EPTB, and unusually large lymph nodes may compress or invade adjacent structures, complicating the disease course.[2] The facial nerve plays a vital role in facial expression and communication; therefore, its involvement can lead to significant functional impairment and deterioration in quality of life.

II. Case Report

A 52-year-old male presented with a progressively enlarging, painless swelling over the left side of the neck for two months, associated with facial asymmetry.(FIG-1) The swelling extended from the posterior midline of the neck anteriorly to the angle of the mandible and measured approximately 15 × 10 cm. The patient was a known case of diabetes mellitus on irregular treatment.

On examination, the swelling was diffuse, ill-defined, non-tender, and not warm, with variable consistency. Multiple sinus openings were noted over the posterior aspect of the swelling, discharging thick, caseating pus. Facial examination revealed drooping of the left angle of the mouth, suggestive of paresis of the mandibular branch of the left facial nerve. (FIG-2)

Contrast-enhanced computed tomography revealed heterogeneous soft tissue thickening with central non-enhancing necrotic areas involving the posterior neck and deep cervical spaces. Magnetic resonance imaging demonstrated multiple enlarged, heterogeneously enhancing cervical lymph nodes with diffuse soft tissue edema extending to the parotid, buccal, sublingual, and masticator spaces. (FIG-3)

Fine-needle aspiration cytology showed extensive necrosis with reactive lymphoid cells, without evidence of malignancy. Biopsy revealed features of acute on chronic inflammation consistent with tuberculous lymphadenitis.

The patient underwent surgical incision and drainage of the abscess, followed by initiation of antitubercular therapy, strict glycemic control, and supportive management including facial physiotherapy. Significant reduction in swelling and gradual improvement of facial nerve function were observed during follow-up. (FIG - 4)

III. Discussion

Tuberculous lymph node involvement accounts for approximately 25% of all tuberculosis (TB) cases and nearly 51% of cases with extrapulmonary involvement. Extrapulmonary tuberculosis (EPTB), which constitutes more than 20% of the TB burden in India, continues to affect communities across the country. As EPTB involves organs other than the lungs, commonly used diagnostic methods such as sputum microscopy and chest radiography are often insufficient, necessitating more complex and invasive diagnostic procedures for confirmation.

Tuberculous lymphadenitis typically presents with an insidious onset and a gradually enlarging, painless swelling involving one or more lymph node groups over weeks to months. Systemic symptoms such as fever, weight loss, fatigue, and night sweats may or may not be present. In the early stages, lymph nodes are usually firm, discrete, mobile, and not attached to the overlying skin. Although multiplicity, matting, and caseation are characteristic features, they are neither sensitive nor specific. In advanced stages, lymph nodes may become matted, the overlying skin inflamed, and abscess formation with sinus tract development may occur, which can be difficult to heal. Unusually large lymph nodes may compress or invade adjacent structures, thereby complicating the disease course.[2,4]

Facial nerve palsy secondary to a cold abscess is extremely rare. Only 11 cases of facial nerve palsy secondary to parotid abscess have been reported in the English literature between 2008 and 2021.[6] Peripheral nerve abscess formation due to caseation of nerve fascicles has been reported in leprosy; however, facial nerve involvement secondary to a tuberculous cold abscess has not been previously well documented.[4]

Among facial nerve palsies, Bell's palsy is the most common cause, accounting for approximately 70% of cases. Trauma contributes to 10–23%, viral infections account for 4.5–7%, and neoplasms for 2.2–5% of cases.[3] The exact mechanism of facial nerve involvement in benign inflammatory conditions remains unclear. Proposed mechanisms include ischemic neuropathy secondary to compression by the abscess, local toxic effects, and perineuritis related to inflammation.[4] The etiology of paralysis may also be influenced by the virulence of the infecting organism and the extent of perineural inflammation.[9]

Staphylococcus aureus is the most common causative organism identified in abscesses with positive pus cultures. Other organisms, including Streptococcus pyogenes, Mycobacterium tuberculosis, gram-negative bacilli, and anaerobes, have also been reported.[8] However, pus culture results are often negative or inconclusive, as observed in many cases reported in the literature.

The presentation of recent-onset facial palsy associated with a painless, progressively enlarging cervical swelling in a diabetic patient warrants urgent evaluation. In addition to routine investigations, radiological imaging is essential for diagnosis, assessment of disease extent, and treatment planning. Ultrasonography serves as a quick and cost-effective initial modality to detect pus collections. However, contrast-enhanced computed tomography is the imaging modality of choice, as it accurately delineates the location and extent of the abscess and aids in surgical planning.[7] Computed tomography also assists in identifying features suggestive of parotid gland malignancy.

Histopathological identification of caseating granulomas in the presence of constitutional symptoms strongly supports a diagnosis of tuberculosis. Once tuberculous cervical lymphadenitis with cold abscess is confirmed, surgical incision and drainage remain the mainstay of treatment to facilitate early decompression of the facial nerve. Medical management, including antitubercular therapy, broad-spectrum antibiotics, adequate hydration, and sialogogues, is equally important. Early initiation of antitubercular therapy and optimal glycemic control are crucial. Supportive measures such as facial physiotherapy and eye protection should be implemented in patients with incomplete eye closure. Ultrasound-guided aspiration may also be considered in selected cases.

The overall prognosis of facial nerve palsy secondary to cold abscess is favorable. However, persistent grade VI facial palsy beyond six months, particularly in the presence of extensive abscess formation and necrosis, may necessitate aggressive surgical debridement to prevent permanent nerve damage.

IV. Conclusion

Facial nerve palsy caused by a tuberculous cold abscess is an uncommon clinical presentation. A detailed clinical history, thorough examination, and a high index of suspicion for tuberculosis are essential for early diagnosis and prevention of facial nerve damage. Radiological imaging plays a crucial role in defining the extent of disease and guiding management. Surgical incision and drainage remain the treatment of choice once an abscess is confirmed. In localized abscesses, a tailored, smaller incision should be considered instead of the classical modified Blair incision. Facial nerve palsy secondary to cold abscess generally carries a favorable prognosis, with complete recovery of nerve function observed in most cases following timely intervention.

Conflict of Interest

The authors declare no conflict of interest.

References

[1]. World Health Organization. Global Tuberculosis Report 2025. Geneva: World Health Organization; 2025. Available From: Https://Www.Who.Int/Teams/Global-Programme-On-Tuberculosis-And-Lung-Health/Tb-Reports
[2]. Dandapat MC, Mishra BM, Dash SP, Kar PK. Peripheral Lymph Node Tuberculosis: A Review Of 80 Cases. Br J Surg. 1990;77:911–912.
[3]. Holland NJ, Weiner GM. Recent Developments In Bell's Palsy. BMJ. 2015;351:H3725. Doi:10.1136/Bmj.H3725
[4]. Salafia A, Chauhan G. Nerve Abscess In Children And Adults With Leprosy: Analysis Of 145 Cases And Review Of The Literature. Acta Leprol. 1996;10(1):45–50.
[5]. Kristensen RN, Hahn CH. Facial Nerve Palsy Caused By Parotid Gland Abscess. J Laryngol Otol. 2012;126:322–324.
[6]. Alam M, Hasan SA, Hashmi SF, Singh PK. Facial Palsy Due To Parotid Abscess: An Unusual Complication. Turk Arch Otorhinolaryngol. 2016;54:168–171.
[7]. Cheng LH, Wang HW, Lin CM, Shih CP, Chu YH, Hung WC, Et Al. Parotid Abscess: 15-Year Experience At A Tertiary Care Referral Center In Taiwan. J Med Sci. 2019;39(5):231–235. Doi:10.4103/Jmedsci.Jmedsci_15_19
[8]. Smith DR, Hartig GK. Complete Facial Paralysis As A Result Of Parotid Abscess. Otolaryngol Head Neck Surg. 1997;117:114–117.

FIGURE- 1 – FACIAL NERVE PALSY

FIGURE-2- COLD ABSCESS

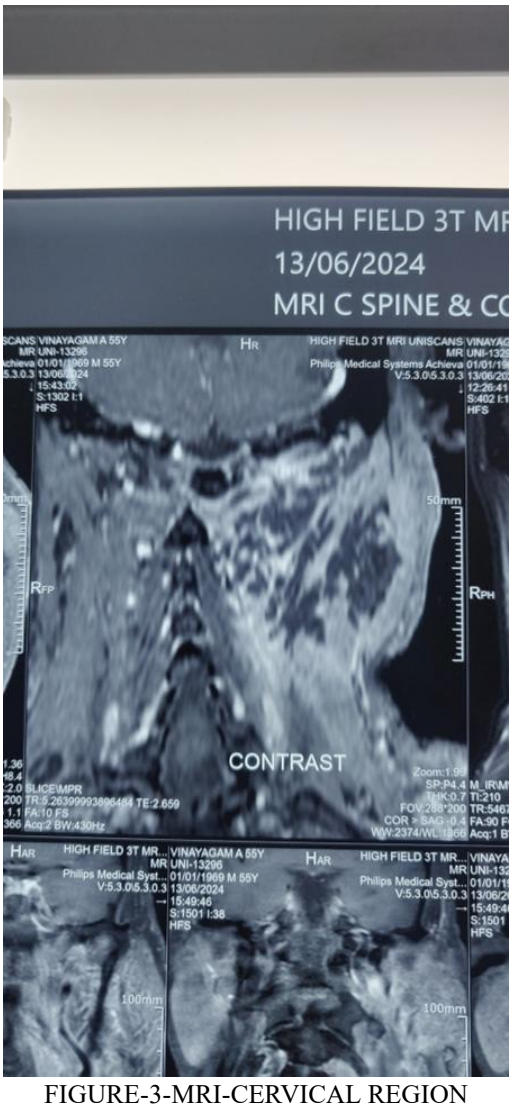

FIGURE-3-MRI-CERVICAL REGION

FIGURE-4-