IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 24, Issue 3 Ser. 1 (March. 2025), PP 76-80
www.iosrjournals.org

Role of Neck Dissection over Anti-TB Therapy in Retreating Patients

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Abstract
Background: *Tuberculous Cervical Lymphadenopathy (TCL) remains a significant public health challenge, particularly in developing countries. This study aimed to analyze the demographic characteristics, treatment responses, and management outcomes in patients with TCL, focusing on the effectiveness of standard anti-TB medication and the role of surgical interventions in non-responsive cases.*
Methods: *This retrospective comparative analysis was conducted at the Department of Otolaryngology, Dhaka Medical College Hospital, Bangladesh, from July 2019 to July 2023. The study included 37 patients with TCL, some of whom were relapse cases and some of whom were non-responsive to anti-TB treatment after a significant time period. Patients were treated either with prolonged anti-TB therapy alone (retreatment) or in combination with neck dissection. The outcomes assessed included recurrence rates, complication profiles, and long-term disease control.*
Result: *In this study of 37 patients, 81.08% underwent medical retreatment, with 73.33% achieving complete response upon reassessment. The remaining 18.92% directly pursued neck dissection as their initial step, and were further retreated for 6 months after surgery. For those who did not respond to the retreatment, 26.67% subsequently required surgical intervention. This approach led to complete recovery in 80% of the surgical cases, demonstrating the effectiveness of neck dissection when medical management is insufficient.*
Conclusion: *This study demonstrates that neck dissection is an effective treatment for patients with Tuberculous Cervical Lymphadenopathy who do not respond adequately to standard anti-TB therapy. While medical retreatment can resolve the condition in many cases, neck dissection is crucial for those with persistent or slow-responsive tumors, leading to a high rate of complete recovery. Personalized treatment strategies, combining both medical and surgical approaches, are essential for optimizing patient outcomes in TCL management.*
Keywords: *Tuberculosis, Anti-TB Therapy, Neck Dissection, Treatment Failure, Retreatment*

I. INTRODUCTION

Tuberculosis remains a major global health problem, with over 10 million new cases and 1.5 million deaths annually worldwide according to the World Health Organization (1,2). Cervical lymphadenitis, characterized by swelling of the lymph nodes in the neck, is one of the most common clinical manifestations of extrapulmonary tuberculosis (3). While anti-tubercular drug therapy forms the mainstay of treatment, residual infected lymph nodes can lead to recurrence and complications if not adequately addressed (4,5). neck dissection has emerged as a supplementary surgical approach but its precise role when combined with medication requires further evaluation (6,7). The management of cervical tuberculosis poses unique challenges due to the complex interplay between drug efficacy and residual disease. Anti-TB drugs achieve high cure rates for pulmonary tuberculosis but extrapulmonary forms involving lymph nodes present difficulties in ensuring complete sterilization with medication alone (8,9). Inadequate drug penetration or noncompliance may allow dormant bacilli to persist, placing patients at risk of relapse even after initial treatment success (10). At the same time, surgery for cervical lymphadenitis aims to remove infected nodes but risks damage to vital neck structures if performed without adequate pre-treatment downsizing (11,12). Controversy thus remains regarding the optimal sequencing

and integration of drug therapy and neck dissection for retreating patients with a history of cervical tuberculosis. While some studies have evaluated neck dissection as an adjunct to initial treatment, the specific role of this procedure in retreating patients with prior anti-TB exposure has been less frequently addressed (6,13). The complexity of retreatment is heightened by unique host and pathogen factors, such as drug-resistant strains and impaired immunity, which significantly impact treatment outcomes (14,15). Clinicians often grapple with the decision of whether to continue drug therapy alone for residual adenopathy or to incorporate adjunctive surgery to enhance sterilization and prevent future complications (16). The absence of large randomized controlled trials contributes to a wide variance in practice, with a lack of robust evidence to guide the integrated medical and surgical management of retreated cases. The current study aims to bridge this knowledge gap through a retrospective comparative analysis of neck dissection versus prolonged anti-tubercular drug therapy in retreated patients with residual cervical lymphadenopathy despite prior treatment. By assessing recurrence rates, complication profiles, and long-term control achieved with each strategy, this study endeavors to shed light on their relative effectiveness and safety. Additionally, it explores immunological and microbiological factors that may predict treatment response. The findings from this study are anticipated to enhance multidisciplinary management protocols, providing clarity on the most effective sequencing and integration of drug treatment and surgery for retreated cervical tuberculosis cases. Given the ongoing global challenge of tuberculosis, improving outcomes for this high-risk subgroup is crucial for reducing disease burden and enhancing patient wellbeing.

II. METHODS

This retrospective comparative analysis was conducted over a four-year period, from July 2019 to July 2023, at the Department of Otolaryngology, Dhaka Medical College Hospital, Dhaka, Bangladesh. The study initially identified 189 patients diagnosed with Tuberculous Cervical Lymphadenopathy (TCL) during this timeframe. The inclusion criteria were patients of any gender, aged 15 and above, presenting with neck swelling and diagnosed with TCL based on clinical examination, laboratory investigations, and histopathological confirmation. This study included both primary TB cases and those with recurring TB. All patients were provided with an appropriate anti-TB treatment regimen for 6 months to 2 years as prescribed. However, even after one year of treatment or more, 29 cases were non-responsive to therapy. Another 8 patients were diagnosed as relapsed cases. Therefore, the current study focused on these 37 patients who were classified as treatment failures or relapse cases. Treatment failure was defined as cases where, despite one year of treatment after the initial diagnosis of TB, the medication proved ineffective, as the tumors were non-responsive. Relapse cases were defined as patients who had completed treatment and were declared cured from any form of TB earlier. Following treatment failure, the treatment regimen was changed according to the patient's needs, and they were started on retreatment. Exclusion criteria were applied to omit patients who were on continuous anti-tuberculous treatment for other forms of TB at the time of admission to the study hospital, those diagnosed with concurrent chronic or infectious diseases, and children with TB. Patients showing resistant TB strains, unable to provide informed consent, or lost to follow-up were also excluded from the study. All data collected were anonymized to ensure the confidentiality of the participants.

III. RESULTS

Table 1: Distribution of participants by socio-demographic characteristics (N=37)

Baseline	Frequency	Percentage
Age		
15-30	30	81.08%
31-45	4	10.81%
>45	3	8.11%
Gender		
Male	8	21.62%
Female	29	78.38%

The majority of participants, 81.08%, were aged between 15 and 30 years, while 10.81% were aged between 31 and 45 years, and 8.11% were older than 45 years. In terms of gender distribution, the majority of participants were female, constituting 78.38% of the sample, while the remaining 21.62% were male.

Table 2: Management of treatment failure or relapse cases (N=37)

Outcome	Frequency	Percentage
Initially opted for medical retreatment	30	81.08%
Initially opted for neck dissection	7	18.92%

In terms of management of the treatment failure cases, 81.08% of the participants had initially opted for medical retreatment, while the remaining 18.92% had opted for neck dissection followed by retreatment.

Table 3: Treatment response of medical retreatment cases after 6-months (n=30)

Outcome	Frequency	Percentage
Complete Response	22	73.33%
Further treated with neck dissection	8	26.67%

Among the 30 patients who had been receiving medical retreatment, 73.33% showed complete recovery after 6 months of retreatment. Recovery was counted as tumor size decreasing to <2cm. However, the remaining 26.67% had tumor size >2cm despite 6 months of retreatment, suggestive of no response, and were then treated with neck dissection.

Table 4: Complications of treatment observed among neck dissection participants (n=15)

Duration	Frequency	Percentage
Hypertrophic Scar	3	20.00%
Pain in scar region	3	20.00%
Delayed wound healing	2	13.33%

Among the 15 participants who had undergone neck dissection, 20% had hypertrophic scar, and 13.33% had delayed wound healing. Pain in the scar region was also observed in 20% of the participants.

Table 5: Outcome of participants (n=37)

Outcome	Frequency	Percentage
Complete Recovery	36	97.30%
Neck Dissection successful, TB Node in another location	1	2.70%

Among the 37 participants of treatment failure, 97.30% of the participants had shown complete recovery after further treatment. However, 1 participant (2.70%), although had a successful neck dissection, had a new TB node in another side within one year of follow-up.

IV. DISCUSSION

The present study examined the effectiveness of neck dissection versus prolonged anti-tubercular drug therapy in retreating patients with Tuberculous Cervical Lymphadenopathy (TCL). The study included 37 patients, of which 81.08% were aged between 15 and 30 years, 10.81% were aged between 31 and 45 years, and 8.11% were older than 45 years. The female-to-male ratio was approximately 4:1, with 78.38% of participants being female, which aligns with the findings of other studies that show a higher prevalence of TCL among younger females (17). The results indicated that, 81.08% of the 37 patients initially opted for medical retreatment, while 18.92% chose to undergo neck dissection from the outset. These patients who initially opted for neck dissection typically presented with single-node tumors that were non-inflamed, non-progressive, and could be surgically removed with minimal risk to the patient. After neck-dissection was done, these 7 patients were also given retreatment regimen and were cured completely. Among the 30 patients who received an additional six months of medical retreatment, 73.33% exhibited a complete response, as evidenced by a reduction in tumor size to less than 2 cm. However, the remaining 26.67% of these medically retreated patients showed residual tumor sizes greater than 2 cm and were subsequently treated with neck dissection. This demonstrates that while medical retreatment can be effective in achieving a complete response for many patients, neck dissection remains an essential alternative for those who do not respond fully to medication alone. The observed pattern highlights the importance of a flexible treatment strategy, with initial surgical intervention being appropriate in selective cases. Recognizing the need for personalized treatment approaches is critical for achieving optimal outcomes in managing Tuberculous Cervical Lymphadenopathy. Among the total study population, 97.30% had experienced complete recovery, while 1 patient had a TB node appear in another location, suggesting that further immunological and microbiological research needs to be conducted on such patients. These results are consistent with the findings of Gaikwad et al. (2018), who reported a beneficial role of lymphadenectomy in tuberculous cervical lymphadenitis patients with persistent symptoms (6). The role of neck dissection in cervical tuberculous lymphadenitis was also emphasized in a clinical review by Omura et al. (2016), where they found that surgical treatment, including neck

dissection, was effective in cases resistant to chemotherapy (18). Similarly, Zada et al. (2022) observed the efficacy of surgical interventions in treating tubercular cervical lymphadenopathy (19). Another study by Weiler et al. (2000) highlighted the success of combined medical and surgical treatment options, with surgery playing a crucial role in cases resistant to medication (20). An important observation is that neck dissection, when used as an adjunct to medical therapy, significantly improved outcomes for patients with tuberculous cervical lymphadenopathy. However, the findings also indicate the necessity of continuous monitoring, as some cases resulted in partial recovery or the appearance of TB nodes in another location. This aligns with other studies, such as that by Kanjanopas et al. (2014), which suggested surgical treatment for all accessible lymph nodes ≥ 3 cm in diameter prior to a full course of drug therapy for increased cure rates (16). In conclusion, the current study and similar studies emphasize the importance of personalized treatment approaches in managing TCL. neck dissection, particularly as an adjunct to medical therapy, appears effective but may not always provide a definitive cure. Continuous monitoring and individualized treatment plans are crucial for improving outcomes in patients with tuberculous cervical lymphadenopathy.

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

V. CONCLUSION

The present study examined the effectiveness of neck dissection and prolonged anti-tubercular drug therapy in retreating patients with Tuberculous Cervical Lymphadenopathy (TCL). The findings indicate that while prolonged anti-TB therapy resulted in a significant number of complete responses, a substantial subset of patients required alternative or adjunctive interventions. neck dissection was highly effective in achieving complete recovery in the majority of treatment-failure cases or relapse cases. The study reinforces the need for personalized treatment strategies, highlighting the potential benefits of combining surgical and medical therapies for optimal patient outcomes. Ultimately, retreatment is a good choice for many patients as it is non-invasive and doesn't have the risks associated with neck dissection, but surgery might be required if the patients are non-responsive after different anti-TB regiments. Future research should focus on further refining treatment protocols and exploring the long-term implications of combined therapeutic approaches for TCL.

Funding: No funding sources

Conflict of interest: None declared

VI. RECOMMENDATION

Based on the findings of this study, it is recommended that clinicians consider neck dissection as a treatment option for patients with Tuberculous Cervical Lymphadenopathy who do not fully respond to anti-TB therapy. Given the high rates of complete recovery associated with the procedure, neck dissection should be integrated into treatment protocols for cases where medical management alone proves insufficient. Further research, including prospective randomized controlled trials, is warranted to establish standardized guidelines for the integrated medical and surgical management of TCL, particularly in retreating patients. Additionally, ongoing monitoring and individualized treatment plans should be prioritized to ensure optimal patient outcomes.

REFERENCES

[1]. WHO: Global TB progress at risk [Internet]. [cited 2023 Dec 5]. Available from: https://www.who.int/news/item/14-10-2020-who-global-tb-progress-at-risk
[2]. WHO | Regional Office for Africa [Internet]. 2023 [cited 2023 Jun 18]. Tuberculosis (TB). Available from: https://www.afro.who.int/health-topics/tuberculosis-tb
[3]. Sharma SK, Mohan A. Extrapulmonary tuberculosis. Indian J Med Res. 2004 Oct;120(4):316–53.
[4]. Kimura Y, Shimada M, Kawashima M, Yamane A, Nagai H, Matsui H. Relapse of cervical tuberculous lymphadenitis immediately after completion of effective anti- tuberculosis treatments. Respirol Case Rep [Internet]. 2020 Apr 7 [cited 2023 Dec 5];8(4):e00555. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7136954/
[5]. Lee JY. Diagnosis and treatment of extrapulmonary tuberculosis. Tuberc Respir Dis (Seoul). 2015 Apr;78(2):47–55.
[6]. Gaikwad P, Samuel VM, Rupali P. Tb or not Tb: Paradoxical response and the role of lymphadenectomy in tuberculous cervical lymphadenitis. India J Appl Res 2018 Feb; 6 (10).
[7]. Cheng LHH, Bothamley G, Douglas A. Neck dissection for tuberculous suppurative cervical lymphadenitis. British Journal of Oral and Maxillofacial Surgery [Internet]. 2007 Oct 1 [cited 2023 Dec 5];45(7):e16. Available from: https://www.bjoms.com/article/S0266-4356(07)00312-9/fulltext
[8]. Dheda K, Barry CE, Maartens G. Tuberculosis. The Lancet [Internet]. 2016 Mar 19 [cited 2023 Dec 5];387(10024):1211–26. Available from: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)00151-8/fulltext
[9]. Frieden TR, Sterling TR, Munsiff SS, Watt CJ, Dye C. Tuberculosis. Lancet. 2003 Sep 13;362(9387):887–99.
[10]. Lange C, Abubakar I, Alffenaar JWC, Bothamley G, Caminero JA, Carvalho ACC, et al. Management of patients with multidrug-resistant/extensively drug-resistant tuberculosis in Europe: a TBNET consensus statement. Eur Respir J [Internet]. 2014 Jul [cited 2023 Dec 5];44(1):23–63. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4076529/

[11]. Spinelli G, Mannelli G, Arcuri F, Venturini E, Chiappini E, Galli L. Surgical treatment for chronic cervical lymphadenitis in children. Experience from a tertiary care paediatric centre on non-tuberculous mycobacterial infections. Int J Pediatr Otorhinolaryngol. 2018 May;108:137–42.
[12]. Prasad R, Arthur LG. Cervical Lymphadenopathy. Fundamentals of Pediatric Surgery [Internet]. 2010 Jul 28 [cited 2023 Dec 5];213–9. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7178847/
[13]. Asaduzzaman A, Uddin MK, Azad MA, Safi A, Haque WS. Evaluation of Tubercular Cervical Lymphadenopathy: Diagnostic and Therapeutic Utility. Bangladesh J of Otorhinolaryngology [Internet]. 2020 Jan 26 [cited 2023 Dec 5];23(2):127–32. Available from: https://www.banglajol.info/index.php/BJO/article/view/45140
[14]. Peddireddy V. Quality of Life, Psychological Interventions and Treatment Outcome in Tuberculosis Patients: The Indian Scenario. Front Psychol [Internet]. 2016 Oct 27 [cited 2023 Dec 5];7:1664. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5081393/
[15]. Dedefo MG, Sirata MT, Ejeta BM, Wakjira GB, Fekadu G, Labata BG. Treatment Outcomes of Tuberculosis Retreatment Case and Its Determinants in West Ethiopia. Open Respir Med J [Internet]. 2019 Dec 31 [cited 2023 Dec 5];13:58–64. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7040470/
[16]. Kanjanopas K, Siripan N, Phoophitphong R. TUBERCULOUS CERVICAL LYMPHADENOPATHY AND THE ROLE OF SURGICAL TREATMENT. Southeast Asian J Trop Med Public Health. 2014 Nov;45(6):1419–24.
[17]. Woo J, Yoon J, Lim C, Kim DY. Tuberculous Cervical Lymphadenitis, Treatment and Outcome. Korean Journal of Otorhinolaryngology-head and Neck Surgery [Internet]. 2007 [cited 2024 May 6];50:913–7. Available from: https://consensus.app/papers/cervical-lymphadenitis-treatment-outcome-woo/aaaf4634bccb504ab9fab1033f1a6eb4/
[18]. Omura S, Nakaya M, Mori A, Oka M, Ito A, Kida W, et al. A clinical review of 38 cases of cervical tuberculous lymphadenitis in Japan - The role of neck dissection. Auris, nasus, larynx [Internet]. 2016 [cited 2024 May 6];43 6:672–6. Available from: https://consensus.app/papers/review-cases-lymphadenitis-japan-role-neck-dissection-omura/c815265ca8c35929b275ea66f8c58ec9/
[19]. Zada B, Durrani SN, Billah M, Iqbal J, Khan AA, Nadeem M. Evaluation of Treatment Efficacy of Surgical Interventions for Tubercular Cervical Lymphadenopathy. Pakistan Journal of Medical and Health Sciences [Internet]. 2022 [cited 2024 May 6]; Available from: https://consensus.app/papers/evaluation-treatment-efficacy-surgical-interventions-zada/2609c64f36d25ad6ac0bcd8b3bdbc8fc/
[20]. Weiler Z, Nelly P, Baruchin AM, Oren S. Diagnosis and treatment of cervical tuberculous lymphadenitis. J Oral Maxillofac Surg. 2000 May;58(5):477–81.