Original Article

Dissection of Tubercular Neck Node for Diagnosis as well as Therapy- A Study of 150 Cases in CMH Dhaka

Azad MA[1], Mamun AA[2], Uddin MK[3], Hossain MD[4], Nur L[5]

DOI: https://doi.org/10.3329/jafmc.v18i1.61267

Abstract

Introduction: Tubercular lymphadenitis nowadays is the commonest extra pulmonary manifestation of tuberculosis in Bangladesh. Sometimes it causes diagnostic and therapeutic challenge for the clinicians. Occasionally Clinical, laboratory findings and fine needle aspiration cytology (FNAC) is not optimum that creates diagnostic and therapeutic dilemma. FNAC is often inconclusive. Sometimes therapy failed cases and atypical tuberculosis require open biopsy and neck dissection.

Objective: To see the effectiveness of lymph node dissection & biopsy for diagnostic purpose and efficacy of the operation in suspected Multi-drug resistant tuberculosis (MDR-TB) for treatment failure due to any reason.

Material and Methods: This cross sectional observational study was conducted during the time period of 01st Jan 2014 to 1st Jan 2020 in ENT & Head-Neck Surgery & Pulmonology department, Combined Military Hospital Dhaka on 150 patients who have undergone surgical neck dissection.

Results: In this study total number of patients were 216. FNAC was done for all of them and found nonspecific lymphadenitis for 41 cases, lymphoma for 12 cases, sarcoidosis for 08 cases and kikuchi disease for 05 cases. 150 patients were found inconconclusive in FNAC. Inclusion criteria are followings, 1. FNAC is inconclusive & negative 2. Surgery was not done before. Among 150 patients different types of surgery was done like enblock resection, selective neck dissection and modified neck dissection. Histopathologically 06 cases found nonspecific lymphadenitis, 03 cases found lymphoma and 01 case found sarcoid granuloma. 150 cases were found histopathologically tubercular lymphadenitis. They show positive findings in biopsy, caseation necrosis- (100%), C/S +, among the Gene Xpert tests- Gene X-pert (Rif sensitive 83.33%, Rif resistant 16.66%).

After completion of anti-tubercular therapy (ATT) (CAT-I HRZE) for total 150 patients, 125 patients were cured and 25 patients were not cured (treatment failure). Out of 25 patients 10 developed multiple cold abscess, 08 developed discharging sinus and 07 had relapse during follow up. 2nd Surgical interventions were done in total 25 patients, 10 TB abscess during ATT (CAT-1 HRZE), 8 discharging sinus and 7 relapse patients along with ATT (CAT-2 SHRZE) and all these patients had no relapse or treatment failure during further follow up.

Conclusion: Tuberculous lymphadenitis is best treated with anti-tubercular medication and in addition surgical neck dissection is more useful in selected cases. So role of surgery is most useful for diagnostic accuracy as well as adjunct to the treatment avoiding prolongation of ATT and noxious side effects of drugs and also to prevent the formation of abscess and sinus.

Key-words: Tubercular lymphadenopathy, Anti tubercular drug, Surgical treatment.

Introduction

Tuberculous lymphadenopathy commonly involves lymphnodes of the head and neck region (posterior and anteriorcervical chains, supraclavicular fossae, submandibular) in which cervical lymphadenopathy is most common[1-3]. Tuberculous lymphadenopathy is not a life-threatening problem but does require treatment by physicians as well as surgeons. The majority of patients tend to be young, healthy, working adults without constitutional symptoms. However, lymphadenopathy can progress to abscess and fistula formation, which can be disabling and socially unacceptable[4]. Surgery is required for enlarged lymph nodes or tuberculous lymph node which does not regress with medication alone[5]. Complete surgical excision of the affected lymph nodes and overlying skin and selective nodal or functional neck dissection when required[6].

The diagnosis of TB is mainly based on a positive mycobacterial smear and/or culture positive sample, Gene X-Pert positive or the histopathological presence of a chronic or caseating granuloma[7]. Histopathology and Gene X-pert is the most confirmatory test[8].

In this study an attempt was made to evaluate the role of surgical dissection in tubercular cervical lymphadenopathy for diagnostic and therapeutic purposes.

Materials and Methods

This cross-sectional observational study was conducted at Combined Military Hospital, Dhaka during the period of Jan 2014

1. **Col Muhammad Ali Azad**, MBBS, DLO, MCPS, FCPS, Classified ENT Specialist & Head-Neck Surgeon, CMH, Chattogram (*E-mail*: aliazad101052@gmail.com) 2. **Brig Gen Abdullah Al Mamun**, MBBS, MPH, MPhil, Commandant, CMH, Chattogram 3. **Brig Gen Md. Kabir Uddin**, MBBS, FCPS(Medicine), FCPS (Pulmonology), Adviser Specialist of Medicine, CMH, Chattogram 4. **Lt Col Mohammad Delwar Hossain**, MBBS, DLO, MCPS, FCPS, Classified ENT Specialist & Head-Neck Surgeon, CMH, Chattogram 5. **Dr Laila Nur**, BDS, MPH (HP&HE).

to Jan 2020. The diagnostic findings were recorded in predesigned "diagnostic notes" register. Charts of the patients both male and female in the age range from 12 to 74 years were reviewed and operation notes were analyzed. Total 150 cases were studied. Approval of the Institutional Ethical Committee was obtained for publishing the study. All patients have given informed written consent prior to study. Surgical dissection was done for biopsy. In biopsy, materials are divided into three parts (1/3rd in normal saline for acid-fast bacillus (AFB) culture and staining, 1/3rd in normal saline for Gene X-pert, 1/3rd in formalin for histopathology).

Inclusion criteria for tubercular lymphadenitis is clinical sign symptoms + caseation granuloma or granuloma + Gene X-pert positive or AFB culture positive asymptomatic TB (without constitutional symptoms of TB) but biopsy showed caseation granuloma or granuloma + Gene X-pert positive also included in the study.

Patients did not response adequately to anti-tubercular therapy (CAT-1 HRZE) following surgical excision undergone 2nd look surgical intervention (excision, neck dissection along with anti-tubercular medication (CAT-2 SHRZE) for tubercular cervical lymphadenopathy. Required data regarding diagnostic findings and method of surgery were retrieved. Data thus obtained were analyzed using SPSS version 16 for testing the significance of data, Pearson chi square was used as test of significance. A p-value of <0.05 was considered statistically significant.

Results

Out of total 150 patients operated, 112 were male and 38 were female. The ratio of male and female is 4:1. The age range of the patients was 12-74 years. In this study total patients were 150. They show positive finding in biopsy (caseation necrosis); AFB staining positive; Gene X-pert-MTB detected). After completion of surgery& administering ATT(CAT-1 HRZE) out of total 150 patients; 125 patients were cured and 25 patients were not cured (treatment failure).10 patients developed multiple cold abscess without any sinus, 8 patients developed cold abscess with sinus, 7 patients got relapse and got node in the other site of neck, 4 patients had lymph node positive for caseating necrotizing granuloma in cytology with no change in size, and the rest 3 patients showed similar cytology with increased size of lymph node.

Second look surgical interventions were done in total 25 patients, 10 TB abscess during ATT (CAT-1 HRZE), 08 treatment failure of cold abscess with sinus and 7 relapse with paradoxical reaction which means existing lymphnode increased in size or new lesions appear during the treatment of tuberculosis patients along with ATT (CAT-2 SHRZE) and all of these cases after 2nd look surgery histopahology, AFB culture for both typical and atypical AFB was done from biopsy specemen and found positive, Gene X-pert was found Rif resistant from 22 cases and Rif sensitive was found rest 3 cases. They had no relapse or treatment failure during further follow up till date.

Table-I: Shows the incidence of cervical lymphadenitis in relation to sex

Sex	Number of patient	Percentage
Male	112	74.40%
Female	38	25.60%

Table-II: Distribution of laboratory findings after surgical excision of TB node (n=150)

Features	Findings	Number of Patient
Histopathology	Caseation necrosis	150(100%)
Gene X- pert	Positive	125(83.33%)
Gene Xpert	Resistant	25 (16,66%)
AFB stain	Positive	10 (6.66%)
AFB culture sensitivity	Positive	03(2%)

Table-III: Biopsy findings of 25 cervical lymphadenopathy patients after 2nd look surgery.

Biopsy findings	Number of patient
Histopathology caseation granuloma	25
Gene X-pert Rif resistant	19
Gene X-pert Rif sensitive	03
AFB stain	03
AFB culture	0

Table-IV: Distribution of patient developed complications during or after antitubercular drug (n=25)

Complications	Number of patient
Cold Abscess without sinus at different levels of neck	10
Cold abscess with sinus at different neck levels	08
TB lymphnode to other site of neck	1
Having caseation necrosis but no change in size	2
Having caseation necrosis but increased in size	4

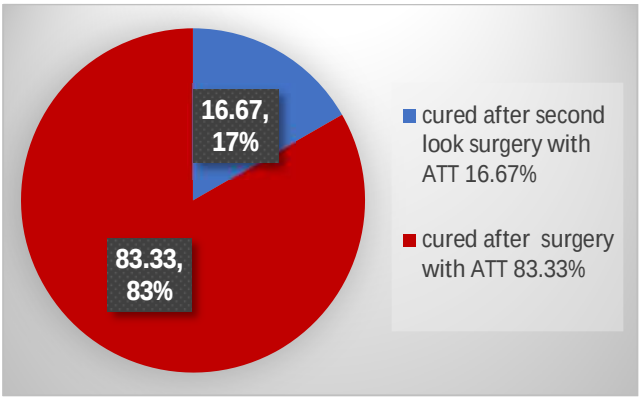

Figure-1: Cure rate of combined surgery and chemotherapy.

Figure-1 shows that the cure rate following combination of surgery and chemotherapy 83.3% cured and 16.7 % who needed 2nd look surgery followed by ATT.

Discussion

The most common manifestation of mycobacterial infection encountered in otolaryngological practice is cervical lymphadenopathy[9]. A higher proportion of the patients are males (Polakova, 1993; Dvorski, 1989)[10]. T-Cell Lymphoma (TCL) is not a life-threatening problem, but does require treatment by physicians and surgeons. Lymphadenopathy can progress to abscess and fistula formation, which can be disabling and socially unacceptable. Physical and laboratory findings may be inconsistent or unreliable. They can mimic other pathologic processes which may be treated with either surgery with medication[11]. ATT under DOTS is the main treatment while surgery is required for enlarged lymph nodes or TCL which does not regress with medication[12]. In this study, out of total 125 patients were completely cured by ATT (CAT-1 HRZE) with surgery and 25 patients required 2nd look surgery. Six patients who were cured by ATT (CAT-1 HRZE) had relapse and required 2nd surgical interventions. 2nd look surgical interventions were done in total 25 patients, 10 TB abscess at multiple neck levels without sinus during ATT (CAT-1 HRZE),08 treatment failure developed cold abscess with sinus at different neck levels and 07 relapses with or without increase in size of the lesion and all these patients were completely cured without relapse or treatment failure after 2nd look surgical intervention and (CAT-2 SHRZE) during follow up. Similar findings were reported in other studies. A study by Kanjanopas K et al[13] found 100 % cure rate after complete surgical excision of the node before receiving a full course of medication. In that study, all cases treated with modified neck dissection before a full course of medication.

Another study conducted by Sui KF et al[14] reported 100% cure rate after excision of all grossly involved lymph node. In a study by Subrahmanyam, 35 patients treated with surgery and chemotherapy, 29 patients were completely cured, and out of 70 patients who had treated only with chemotherapy 52 patients were completely cured.

In this study, among the 25 patients who had not been cured after completion of ATT CAT-I, 10 patients developed cold abscess without any sinus, 08 patients developed cold abscess with sinus, 1 patients got tubercular lymphadenopathy of other site of neck, 2 patients had lymph node positive for caseating necrotizing granuloma in cytology with no change in size, and the rest 4 patients showed similar cytology with increased size of lymphnode.

In the study by Kanjanopas K et al[13], 06 of the 14 who were treated with drug therapy alone had problems; 2 progressed to abscess formation and 4 had residual enlargement of their lymph nodes that required surgery. Of the 47 cases with multiple cervical lymph nodes ≥3 cm india meter, 13 were treated with medication alone; 9(69%) did well and 4 developed an abscess and had residually mph adenopathy.

Similar to other studies, this study has also reported that combination of surgical intervention with anti-tubercular chemotherapy showed better outcome compared to chemotherapy alone.

Figure-2: A 35 years old lady with cold abscess upper neck.

Figure-3: Cut section of TB neck node with central caseation necrosis.

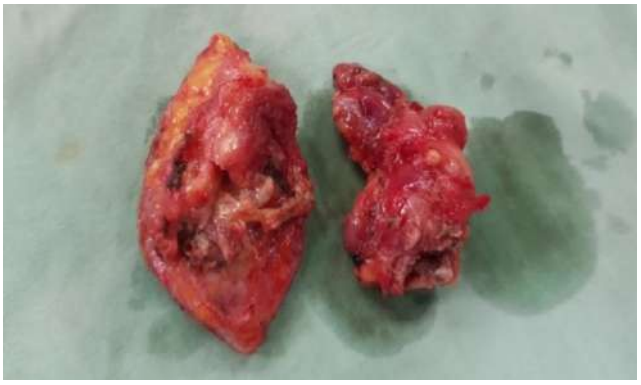

Figure-4: Modified neck dissection of TB neck abscess

Conclusion

Surgical intervention has strong role to confirm diagnosis in undiagnosed patient. Patients who developed complications and those got relapse or failure to anti-tubercular treatment require surgical interventions. Early surgical intervention in these patients reduce complications such as abscess, sinus, fistula formation, or spread of disease to other parts of body.

References

1. Cantrell RW, Jensen JH, Reid D. Diagnosis and management of tuberculous cervical adenitis. Arch Otolaryngol.1975; 101:53–7.

2. Hooper AA. Tuberculous peripherally MPH adenitis. Br J Surg. 1972; 59:353–9.

3. Kent DC. Tuberculous lymphadenitis: Not a localized disease process. Am J Med Sci. 1967; 254:866–74.

4. Kanlikama M, Mumbuc S, Bayazit Y et al. Management strategy of mycobacterial cervically MPH adenitis. J Laryngolotol. 2000; 114:274-8.

5. Castro DJ, Hoover L, Zuckerbraun L. Cervical mycobacterial lymphadenitis medical vs surgical management. Arch Otolaryngol.1985; 111:816-9.

6. Danielides V, Patrikakos G, Moerman M et al. Diagnosis, management and surgical treatment of non-tuberculous mycobacterial head and neck infection in children. ORLJO torhinolaryngol Relat Spec. 2002; 64:284-9.

7. Michael RC, Michael JS. Tuberculosis in otolaryngology: Clinical presentation and diagnostic challenges. Int J Otolaryngol. 2011; 2011:686894.

8. Lau SK, Kwan S, Lee J et al. Source of tubercle bacilli in cervical lymphnodes: A prospective study. J laryngol Otol. 1991; 105(7):558-61.

9. Munck K, Mandpc AH. Mycobacterialinfec- tions of the head and neck. Otolaryngol Clin North Am. 2003; 36:569-76.

10. Polakova K. Tuberculosis lymphadenitis, the most frequent symptoms of extra pulmonary tuberculosis. Bratisl LekListy(Slova- kia). 1993; 94:504-6.

11. Kanlikama M, Mumbuc S,Bayazit Y et al. Management strategy of mycobacterial cervically mph adenitis. J Laryngolotol. 2000; 114:274-8.

12. Castro DJ, Hoover L, Zuckerbraun L. Cervical mycobacterial lymphadenitis medical vs surgical management. Arch Otolaryngol. 1985; 111:816-9.

13. Kanjanopas K, Siripan N and Phoophitphong R. Tuberculous cervical lymphadenopathy and the role of surgical treatment. Southeast Asian J Trop Med Public Health. 2014; 45:1419-24.

14. Siu KF, Ng A, Wong J. Tuberculous lymphadenopathy: A review of results of surgical treatment. Aust N Z J Surg. 1983; 53(3):253-7.