

Surgical excision and histopathological examination outcomes of oral and cervicofacial lymph nodes enlargement

Suha Mohammad Sami*

Department of Oral and Maxillo Facial Surgery, Kufa College of Dentistry, Iraq,
Certificate of Dental Implant, Charite University Hospital, Germany

SUMMARY Lymphadenopathy may be due to the invasion of inflammatory or neoplastic cells into lymph nodes.

Materials and Methods: Fifty-eight patients were presented 25 (43.1%) patients were male and 33 (56.9%) patients were female, average age was between (2-80) years.

Results: Our study revealed that 45 (77.6%) patients were associated with malignant lymph nodes enlargement 20 (34.48%) patients were male and 25 (43.1%) patients were female and revealed that 13 (22.4%) patients were benign lymph nodes 5 (8.62%) patients were male and 8 (13.8%) patient were female, the mean age of patients which was associated with benign lymphadenopathy was 30.38y and those with malignant lymphadenopathy was 57.2 year and p-value revealed was highly Significant<0.001.

Discussion: Our results revealed that 13 (22.4%) patients complained of benign lymph nodes and 45 (77.6%) patients were associated with malignant lymph nodes enlargement, which was disagreement with Iqbal M et al, which was reported that 15.9% cases due to tumor metastases and lymphoma, may be due to that patient with benign lesion will go to the primary care unite nearby home while patients complaining of malignancy must visit tertiary hospital which I was present, but our result was agreement with Lee Y et al 10 reported that prevalence of malignant lymph node 40%-60% in referral center.

Conclusion: Surgical excision of oral and cervicofacial lymph node enlargement beneficial easy procedure to promote result of histopathological examination which was the stone that we depend upon it in diagnosis for fast track of treatment especially with malignancy, bilateral lymph node enlargement it indicated poor prognosis whether child or elderly patient and/or late stage of tumor . Surgical excision of lymph node was accompanied with rare complication and most common was infection and formation of scar post-operatively.

Key words: surgical excision, histopathological examination, lymphadenopathy

Address for correspondence:

Suha Mohammad Sami, Department of Oral and Maxillo Facial Surgery, Kufa College of Dentistry, Iraq, Certificate of Dental Implant, Charite University Hospital, Germany, email: suha.alkishwan@uokufa.edu.iq

Word count: 3107 **Tables:** 04 **Figures:** 06 **References:** 19

Received: - 04 October, 2019

Accepted: - 24 October, 2019

Published: - 30 October, 2019

INTRODUCTION

There are 60-70 lymph nodes situated in the head and neck region which linked by lymphatic vessels, which appear oval-shaped so any abnormality in the number, consistency, in the size is defined lymphadenopathy [1]. Lymphadenopathy is disease of reticuloendothelial system related to an increase in normal lymphocytes and macrophages due to antigen [2]. It can be localized or generalized and can be classified as acute, sub-acute and chronic, the latter constitute any swollen of lymph nodes that does not resolve by six weeks [3]. Lymphadenopathy may be due to invasion of inflammatory or neoplastic cells into lymph nodes. A patient presented with palpable cervical and/or submandibular lymph nodes is a serious diagnostic and therapeutic challenge [1, 4]. The etiology of cervical lymphadenopathy may be due to infections, iatrogenic, autoimmune disorders, malignancies and miscellaneous. Optimal work up for cervical lymphadenopathy through history taking, physical examination, hematopathologic tests, imaging ultrasonography (US), Magnetic Resonance Imaging (MRI), Computed Tomography (CT) and Positron Emission Technique (PET) [5]. All these are helpful in evaluating the size, site, shape and the vascular pattern of the lymph nodes [6], (Figure 1).

But the definitive diagnosis requires excisional and sentinel lymph node biopsy which is considered a vital part of the management [7]. Specific complications of having lymphadenectomy like an infection in wound, a build-up of fluid in the lymph node area seroma, swelling in the affected

Lymph Nodes of the Head and Neck



Fig. 1. Distribution of head and neck lymph nodes

arm over months lymphedema and injury to nerves near the site of operation may cause areas of numbness of skin. Regarding the complication of surgical excision of lymph node postoperatively, Infection may lead to neck abscess and reopening of the incision, and bleeding as with any type of surgery, Injury of the nerve which supply the tongue and lower lip in the operative field, injury to sensory nerves which affecting sensation of the earlobe, skin of the neck, Injury to the spinal accessory nerve can result in disability of trapezius muscle function lead to affecting movement of shoulder could be temporary or permanent through the surgical exploration of lymph node biopsy [8]. Surgical excision may form scarring postoperatively and another enlarged lymph node. The aim of our study was to analyze the outcomes of surgical excision and histopathological examination of lymph nodes (Figure 2).

MATERIALS AND METHODS

A retrospective study which was included patients who presented with oral and Maxillofacial lymphadenopathy more than six weeks duration that does not resolve [3], fifty-eight patients were presented 25 (43.1%) patients were male and 33 (56.9%) patients were female, average age was between (2-80) years, surgical lymph nodes biopsy is done ta AL-Sadder teaching hospital from September 2007-2018. A thorough personal and family history was taken, intraoral and extraoral clinical examination to exclude any acute infection, the examination of the neck includes the size, site, laterality, tenderness and the texture of lymph nodes. In addition to the clinical examination and blood investigations, ultrasonography US, computed tomography CT and/or Magnetic resonance image MRI were taken for all patients to provide information about the size and the extent of the enlarged lymph node, in some cases FNAC was performed (Figures 3-6). All surgical procedures were performed under general anesthesia after obtaining informed consent from the patients; the most accessible enlarged lymph node was excised through extra oral approach and sent for histopathological examination. The investigated data included demographic and clinical parameters in addition to the final histopathological diagnosis. All the selected patients were entailed about the surgical procedure. They were informed about the surgical procedure including prognosis, potential hazards, and complications. They gave their approval to participate in written informed consent. The study protocol was reviewed and approved by the central regional ethics committee.



Fig. 2. Submandibular



Fig. 3. Ultrasonography of submandibular and parotid lymph node enlargement



Fig. 4. Sub mandibular lymph node enlargement

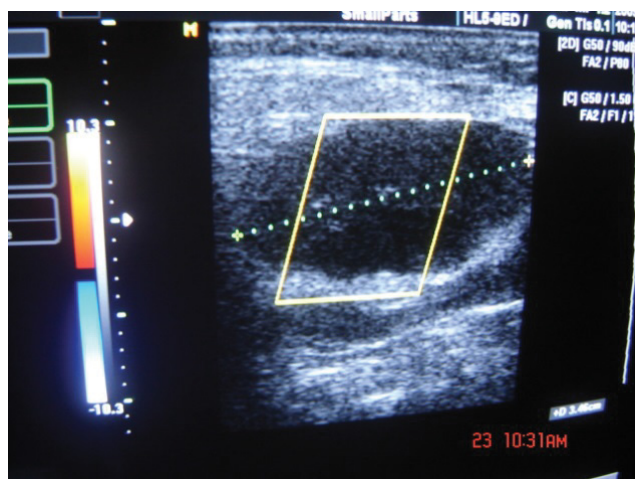


Fig. 5. Ultrasonography of Sub mandibular lymph node

RESULTS

Our study revealed that 45 (77.6%) patients were associated with malignant lymph nodes enlargement 20 (34.48%) patients were male and 25 (43.1%) patients were female and revealed that 13 (22.4%) patients were benign lymph nodes 5 (8.62%) patients were male and 8 (13.8%) patients were female. Regarding laterality of lymphadenopathy results revealed that 42 (72.43%) patients presented with unilateral lymph nodes enlargement were malignant after histopathological examination and 11 (18.96%) patients who were presented with unilateral lymph



Fig. 6. Sub mandibular and occipital lymph node enlargement

Tab. 1. Characteristic of lymphadenopathy in patients diagnosed histopathologically with benign and malignant disease

	Benign	Malignant	p-value
Mean Age	Mean S D 9.7	57.2 year S D 15.9	0.025
Gender			
Male	5 (8.62%)	20 (34.48%)	0.0074
Female	8 (13.8%)	25 (43.1%)	0.019
Laterality			
Unilateral	11 (18.96%)	42 (72.43%)	0.0042
Bilateral	2 (3.44%)	3 (5.17%)	0.12

Tab. 2. Etiology of the oral and maxillofacial lymphadenopathy by no. of patients and mean age

Diagnosis	No. of patients (%)	Mean age (Year)	p-value	
Secondary metastasis	43 (74.13%)	55.86 Y	0.0012	Significant differences
Non-specific inflammatory reaction	11 (18.96%)	29.45 Y	0.0036	Significant differences
Tuberculous lymphadenitis	2 (3.45%)	34.5 Y	0.001	Significant differences
Non Hodgkins, Non Burkett's lymphoma	2 (3.45%)	30 Y	0.001	Significant differences

nodes enlargement were benign. While bilaterally 3 (5.17%) patients presented were malignant and 2 (3.44%) patients were benign (Table 1).

Results revealed that the etiology of lymph nodes enlargement after histopathological examination were 43 (74.13%) patients were due to Secondary metastasis of malignant diseases with mean age was 55.86 year, 11 (18.96%) patients were due to non-specific inflammatory reaction with mean age was 29.45 year, 2 (3.45%) patients were associated with tuberculosis lymphadenitis with mean age was 34.5 year and 2 (3.45%) patients due to non-Hodgkin's, non-Burkett's lymphoma with mean age 30 year (Table 2).

Our study revealed that all patients which complained of squamous cell carcinoma were unilateral involvement of lymph node enlargement 32 (71.1%) and only one case (2.2%) presented with bilateral lymph node enlargement while those patients with mucoepidermoid carcinoma 5 (11.1%) were unilateral, patients with Adeno cystic carcinoma were 4 (8.8%) unilateral involvement, patient with malignant fibrous histiocytosis was 1 (2.2%) case unilateral lymph node enlargement and 2 (4.4%) were Non-Hodgkin lymphoma non-Burkett's, non-specific phase of lymphoma were bilateral lymph node enlargement. Our result revealed that 42 (93.3%) patients were presented

with squamous cell carcinoma, mucoepidermoid carcinoma, adeno cystic carcinoma, and malignant fibrous histiocytosis were accompanied with unilateral lymph node enlargement except (one patient presented with bilateral lymph node enlargement and two patients which were complaining of Non-Hodgkin lymphoma non-Burkett's. Non-specific phase of lymphoma was bilateral lymph node enlargement it became 3 (6.7%) (Table 3).

Complication of Surgical excision of lymph node enlargement, our result revealed three cases were established an post-operative infection which was treated by drainage and dressing of the wound in addition of systemic antibiotic which was completely resolved, one patient presented with bleeding at site of wound and treated with pressure pack, one patient presented with injury to the motor nerve supply of tongue which was decreased after swelling subsided this will to some extent improve with time.

One patient presented with Injury the sensory nerve of a lateral side of tongue lingual nerve, one patient presented with Injury to the sensory nerve of ear lobe, one patient Injury the nerve controls the lower lip, one patient presented with Injury of spinal accessory nerve patient instructed for

Physiotherapy and shoulder exercises that may help him, one patient presented with injury to the sensory nerve of neck

Tab. 3. Histopathological diagnosis by side (uni or bi lateral) lymph node enlargement

Histopathological diagnosis	Uni lateral lymph node enlargement	Bi lateral lymph node enlargement
Squamous cell carcinoma	32 (71.1%)	1 (2.2%)
Muco epidermoid carcinoma	5 (11.1%)	0 (0%)
Adeno cystic carcinoma	4 (8.8%)	0 (0%)
Malignant fibrous histiocytosis	1 (2.2%)	0 (0%)
Non-Hodgkin lymphoma non-Burkett's. Non-specific phase of lymphoma.	0 (0%)	2 (4.4%)
Total	42 (93.3%)	3 (6.7%)

Tab. 4. A complication of surgical excision of LN by no. of patients

Type of complication post operatively	No. of patients (%)
Infection post-operatively	3 (5.2%) a
Bleeding post-operatively	1 (1.7%) b
Injury to the nerve supply of tongue movement the hypoglossal nerve	1 (1.7%) b
Injury to the sensory nerve supply of lateral side of tongue lingual nerve	1 (1.7%) b
Injury to the sensory nerve of the ear lobe	1 (1.7%) b
Injury the nerve controls the lower lip marginal nerve	1 (1.7%) b
Injury of the spinal accessory nerve	1 (1.7%) b
Injury to the sensory nerve of neck skin	1 (1.7%) b
Recurrence of LN enlargement	1 (1.7%) b
Formation of scar post-operatively	2 (3.4%) c
Total	13 (22.4%)

Different letters indicate significant differences at p<0.05

skin, one patient presented with recurrence of LN enlargement and histopathological examination revealed squamous cell carcinoma and two patients presented with scar formation which was commonly seen at cervicofacial region. The incidence of post-operative complications was 13 (22.4%) (Table 4).

DISCUSSION

Our results revealed that 13 (22.4%) patients complained of benign lymph nodes and 45 (77.6%) patients were associated with malignant lymph nodes enlargement, which was disagreement with Iqbal M et al. [9] which was reported that 15.9% cases due to tumor metastases and lymphoma, may be due to those patients with benign lesion will go to the primary care unite nearby home while patients which complaining of malignancy must visit tertiary hospital which I was present, but our result was agreement with Lee Y et al. [10] reported that prevalence of malignant lymph node 40%-60% in referral centre.

Mean age of patients with enlarged lymph node which were benign histopathologic ally 37.15 years which was mainly due to locoregional infection in such age like odontogenic infection and tuberculosis, while mean age of patients with enlarged lymph node which were malignant histopathologic ally 47.4 year, reason may be due to increasing uses of tobacco with alcohol, chewing of betel nut, change of lifestyle and stress of war and/ or terrorist. Our result was in agreement with Chen CJ et al. [11], Yang YH et al. [12] they reported that peak age of malignant patients was between 45 and 65 years.

Our result revealed that the etiology of lymph nodes enlargement after histopathological examination were 43 (74.13%) patients were due to Secondary metastasis of malignant diseases with mean age was 55.86 year may be patients presented at late stage which was in agreement with Lee Y et al. [10], Yang YH et al. [12]. 11 (18.96%) patients were due to non-specific inflammatory reaction with mean age was 29.45 year, 2 (3.45%)

patients were associated with tuberculous lymphadenitis with mean age was 34.5 year which was unlike Athira Aruna Ramadas [1] may be due to that our center was referral one, and 2 (3.45%) patients due to non-Hodgkin's, non-Burkett's lymphoma with mean age 30 year which was in agreement with Iqbal M [9] they reported that 4.54% of lymphadenopathy due to lymphoma. Our result revealed that 42 (93.3%) were presented with uni lateral lymph node enlargement those presented with squamous cell carcinoma, mucoepidermoid carcinoma, adenoid cystic carcinoma and malignant fibrous histiocytosis which may be due to they presented early for diagnosis and treatment. one patient presented with squamous cell carcinoma and two cases with Non-Hodgkin lymphoma it became 3 (6.7%) which were presented with bilateral lymph node may be malignancy started at midline and locoregional metastases lead to be bilateral lymph node involvement and according to the patient with Non-Hodgkin lymphoma which patient presented with generalized lymph node enlargement, our result in agreement with Harnsberger HR [13, 14] they reported that non-Hodgkin lymphoma appearance as bilateral lymph node without necrosis.

Complication of Surgical excision of lymph node enlargement, our result revealed three cases were established infection post operatively which was in agreement with Wende N. Gibbs [14, 15] reported that abscess formation is one of complications after surgical intervention of lymph node, one patient presented with bleeding at site of wound is rare 15, one patient presented with injury to the motor nerve supply of tongue movement which was decrease after swelling subsided, one patient presented with Injury to the sensory nerve supply of lateral side of tongue lingual nerve, one patient presented with Injury to the sensory nerve of ear lobe, one patient presented with Injury to the nerve control the lower lip marginal nerve, one patient presented with Injury of spinal accessory nerve patient instructed for physiotherapy and shoulder exercises which was helped him, one patient presented with injury to the sensory nerve of neck skin, our result was in agreement with Nilesh Vasan [16], one patient presented with recurrence of LN

enlargement and histopathological examination revealed was squamous cell carcinoma which was in agreement with Cyrus J Kerawala [17], our results revealed two patients was presented with scar formation which was commonly seen at cervico facial region which was in agreement with Nilesh Vasan et al. [16] they reported that scar formation at the site of wound under the skin.

Incidence of post-operative complication was 13 (22.4%) cases which was slightly higher than Wrightson WR Wong et al. [18, 19] they reported that post-operative complication of regional lymph node excision was 19. 5% may be due to delay attendance of patient to a dental clinic, patient ignorance and/or delay of diagnosis of the lesion.

CONCLUSION

Surgical excision of oral and cervicofacial lymph node enlargement beneficial easy procedure to promote result of histopathological examination which was the stone that we depend upon it in diagnosis for fast track of treatment especially with malignancy, bilateral lymph node enlargement it indicated poor prognosis whether child or elderly patient and/or late stage of tumor. Surgical excision of lymph node was accompanied with rare complication and most common was infection and formation of scar post-operatively.

REFERENCES

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Ramadas AA, Jose R, Varma B, Chandy ML. Cervical lymphadenopathy. <i>Dent Res J</i>. 2017;14:73-78. 2. Kanwar VS. Chief Editor: Russell W Steele, Lymphadenopathy. <i>Pediatrics: General Medicine</i>. 2018. 3. Allhiser JN, Knight TA, Shank JC. Lymphadenopathy in a family practice. <i>J Fam Pract</i>. 1981;12:27-32. 4. Upadhyay N, Chaudhary A, Alok A. Cervical lymphadenopathy. <i>J Dent Sci Oral Rehabil</i>. 2012;3:30-33. 5. Jeong WJ, Park MW, Park SJ, Ahn SH. Initial workup for cervical lymphadenopathy: back to basics. <i>Eur Arch Otorhinolaryngeal</i>. 2012;269:2255-2263. 6. Tsuji T, Satoh K, Nakano H, Nishide Y, Uemura Y, et al. Predictors of the necessity for lymph node biopsy of cervical lymphadenopathy. <i>J Cranio maxillofacial Surg</i>. 2015;43:2200-2204 7. Mohan A, Kumaraswamy R, Phaneendra BV, Chandra A. An etiology of lymphadenopathy in adult: Analysis of 1724 cases seen at tertiary care teaching hospital in southern India. <i>Natl Med J India</i>. 2007;20:78-80. 8. Battista AF. Complications of biopsy of the cervical lymph node. <i>Surg Gynecol Obstet</i>. 1991;173:142-146. 9. Iqbal M, Subhan A, Aslam A. Frequency of tuberculosis in cervical lymphadenopathy. <i>J Surg Pak Int</i>. 2010;15:107-109. 10. Lee Y, Terry R, Lukes RJ. Lymph node biopsy for diagnosis: A statistical study. <i>J Surg Oncol</i>. 1980;14:53-56. | <ol style="list-style-type: none"> 11. Chen CJ, You SL, Lin LH, Hsu WL, Yang YW. Cancer epidemiology and control in Taiwan: a brief review. <i>Jpn J Clin Oncol</i>. 2002;32:566-581. 12. Yang YH, Chen CH, Chang JS, Lin CC, Cheng TC, et al. Incidence rates of oral cancer and oral pre-cancerous lesions in a 6-year follow-up study of a Taiwanese aboriginal community. <i>J Oral Pathol Med</i>. 2005;34:596-601. 13. Harnsberger HR, Bragg DG, Osborn AG, Smoker WR, Dillon WP, et al. Non-Hodgkin's lymphoma of the head and neck: CT evaluation of nodal and extranodal sites. <i>AJR Am J Roentgenol</i>. 1987;149:785-791. 14. Gibbs WN, Bridges DA, Opatowsky MJ. Bilateral lymphadenopathy in a young woman. <i>Proc (Bayl Univ Med Cent)</i>. 2008;21:430-432. 15. Roaten JB, Pearlman N, Gonzalez R. Identifying risk factors for complications following sentinel lymph node biopsy for melanoma. <i>Arch Surg</i>. 2005;140:85-89. 16. Vasan N, Joshi A. Edited by Miriam Lango: What is a neck dissection and why is it performed? American Head and Neck Society. 2016. 17. Kerawala CJ, Heliotos M. Prevention of complications in neck dissection <i>Head Neck Oncol</i>. 2009;1:35. 18. Wrightson WR, Wong SL, Edwards MJ, Chao C, Reintgen DS, et al. Complications associated with sentinel lymph node biopsy for melanoma. <i>Ann Surg Oncol</i>. 2003;10:676-680. 19. Martin JB, Carter MC, Gonzalez R, Pearlman N. Identifying risk factors for complications following sentinel lymph node biopsy for melanoma. <i>Arch Surg</i>. 2005;140:89-85. |
|--|---|