International Journal of Research in Medical Sciences
Phatak SV et al. Int J Res Med Sci. 2017 Jul;5(7):3257-3260
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20173027

Case Report

Tuberculous cervical lymphadenitis (scrofula): USG, doppler and elastographic evaluation: report of two cases

Suresh V. Phatak*, Nipun Gupta, Pallavi Phatak

Department of Radiodiagnosis, Jawaharlal Nehru Medical College, Sawangi, Wardha, Maharashtra - 442001, India

Received: 30 April 2017
Accepted: 24 May 2017

***Correspondence:**
Dr. Suresh V. Phatak,
E-mail: suresh_phatak@yahoo.com

ABSTRACT

Lymphadenitis is the most generic form of extra pulmonary manifestation of tuberculosis. It is both diagnostic and therapeutic challenge because it mimics various other pathologic processes and yields inconsistent physical laboratory findings. Diagnosis is quite difficult often requiring biopsy. It is also important to differentiate tuberculous from non-tuberculous mycobacterial cervical lymphadenitis as their treatment protocols are different. We are presenting a case report of two patients who presented with neck swelling. Elastography is a recent advance in the field of sonography helping in identifying nature of pathology. Sonography, doppler and elastographic findings are discussed.

Keywords: Cervical lymphadenitis, Elastography, Tuberculosis, Ultrasound

INTRODUCTION

The classic term is scrofula derived from the Latin word glandular swelling. Hippocrates (460-377 B.C.) has also mentioned scrofulous tumours in his writing.[1] Tuberculous lymphadenitis most frequently involves the cervical lymph nodes followed in frequency by mediastinal, axillary, mesenteric, hepatic portal, perihepatic and inguinal lymph nodes.[2] Mycobacterial lymphadenitis most frequently affects patients in their second decade but may afflict patients of any age. There is a female predominance (approximately 2:1) in most of the studies.[3]

CASE REPORT

Case 1

A 21year old female patient presented at the institution, with a 2-week history of progressively enlarging posterior neck swelling. There was no history of fever, chronic cough, excess night sweats, contact with people with chronic cough, or other swellings on any other part of the body. Weight loss history was positive. There was no history of dysphagia, odynophagia, dysphonia, or difficulty in breathing, history of cold or heat intolerance, change in appetite or bowel habits.

Examination revealed a swelling in lower part of posterior neck on right side; which did not move with protrusion of the tongue and swallowing. It measured approximately 5cm x 3 cms. Chest and abdominal findings were not significant.

Investigations: FNAC indicated reactive lymphadenopathy. Due to strong suspicion of tuberculosis, open biopsy was done, which showed evidence of granulomatous lymphadenitis. ESR was raised. Urine analysis was normal.

Neck ultrasound scan suggestive of tuberculous lymphadenitis in form of matted lymph nodes, indistinct

margins, necrotic areas in lymph node, avascularity on colour doppler and on elastography soft colors seen on elastography scale (red and green) with strain ratio of 1.25.

Figure 1: USG of matted lymph nodes with indistinct margins in posterior neck on right side.

Figure 2: USG of necrotic areas as cystic changes in lymph nodes.

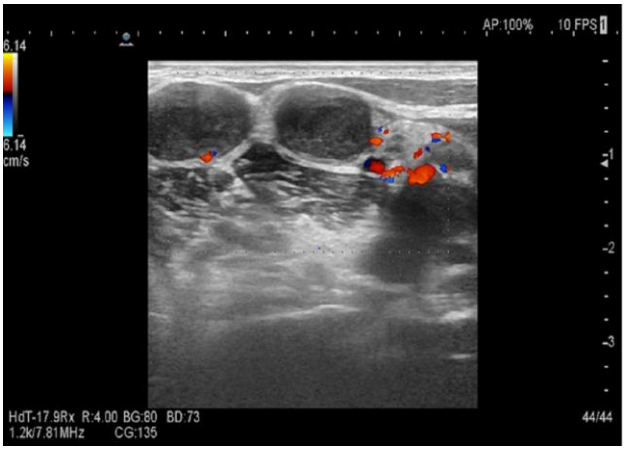

Figure 3: Colour doppler of a vascularity in lymph node.

Patients was on anti-Tuberculosis drugs and follow up at the hospital, with marked improvement subsequently.

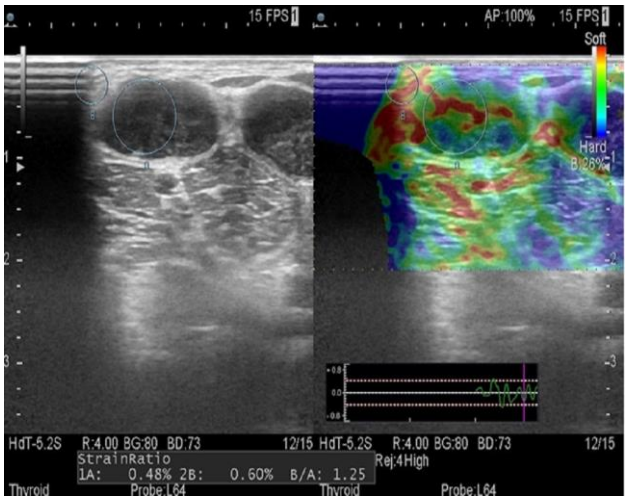

Figure 4: Elastography of soft colours (red and green) on colour scale and strain ratio of 1.25 indicating benign pathology.

Case 2

A-25-year old female patient presented in the medical outpatient department (MOPD) with a left sided submandibular swelling of 2 months duration. She admitted having a history of loss of weight, but no history of fever, chronic cough, drenching night sweats, or contact with people with chronic cough. There was no history of dysphagia, odynophagia, dysphonia, or difficulty in breathing. Examination revealed a middle-aged female in relative good health, with a firm, non-tender mass located in left submandibular region measuring 5 x 4cm. It was mobile. Chest and abdominal exanimation were unremarkable. Examination of the throat was also normal.

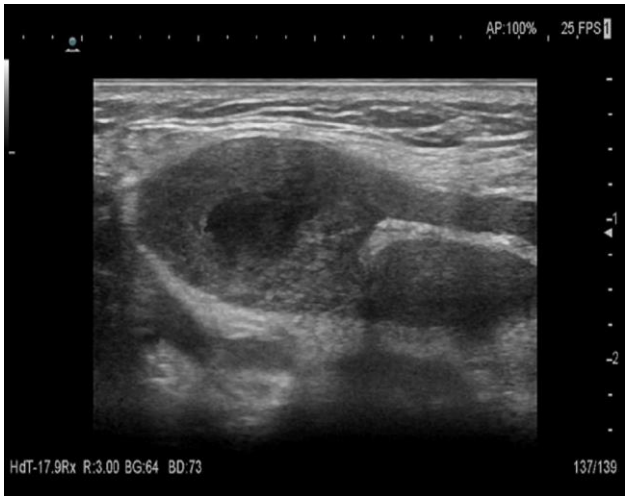

Figure 5: USG of large left submandibular lymph node with cystic areas within indicating necrosis with partial loss of fatty hilum.

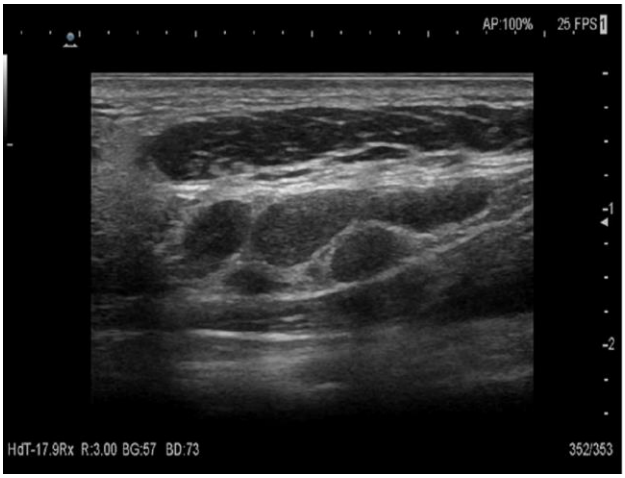

Figure 2: USG of multiple matted left submandibular lymph nodes with indistinct margins.

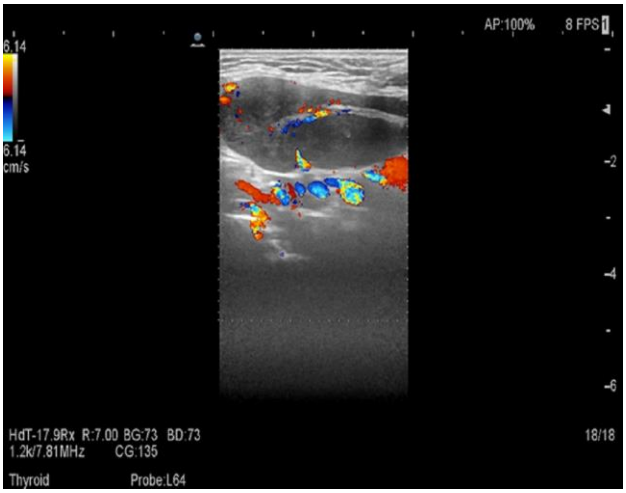

Figure 3: Colour doppler image of relative a vascularity of lymph node.

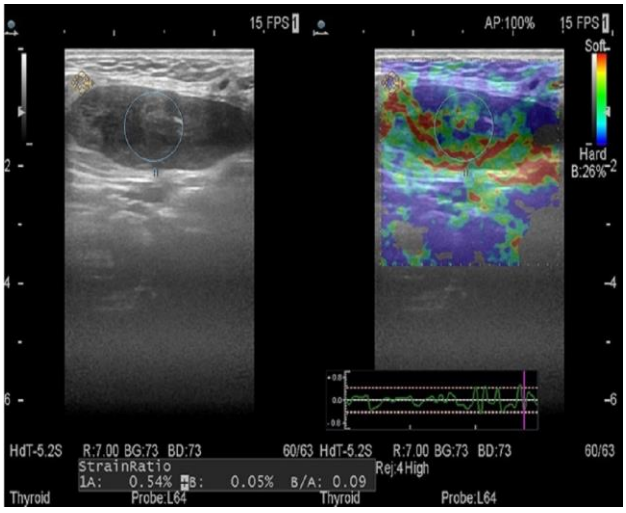

Figure 4: Elastography of hard area (blue colour) less than 45% indicating pattern 2 of on elastography scale and Strain ratio of 0.09 confirming benign nature of lymph node.

Investigations

ESR- 40mm/hour, retroviral serology (RVS) was negative. Urine analysis was normal, indirect laryngoscopy revealed no abnormality. Chest X-ray was normal. Fine needle aspiration cytology (FNAC) revealed macrophages and a few multinucleate giant cells as well as mature lymphocytes. Impression was consistent with tuberculous granulomatous inflammation.

USG revealed multiple matted lymph nodes in left submandibular region with largest node showing cystic areas within. Colour doppler indicated vascularity. Elastography showed predominantly soft colors (red and green) and hard areas <45% on elastography scale (Pattern 2) and a strain ratio of 0.09 indicating a benign pathology.

DISCUSSION

In Mycobacterium tuberculosis lymphadenitis, systemic symptoms are common. Classically patients present with low grade fever, weight loss and fatigue and somewhat less commonly with night sweats Multiplicity, matting and caseation are three important findings of tuberculous lymphadenitis.[1,4] In recent times, potential of USG has been increasingly recognized as a noninvasive tool for the evaluation of cervical lymph nodes. It is cheap, timesaving, repeatable, and easily accessible. More importantly, USG is superior to other imaging modalities in that FNA or CNB can be performed simultaneously under its guidance.

The additional cytological or pathological information greatly increases the diagnostic yield of USG.[5] Commonly tuberculous nodes are seen in posterior triangle and supraclavicular region. On gray-scale sonography, tuberculous nodes tend to be hypoechoic, round, and without echogenic hilus and tend to show intranodal cystic necrosis, nodal matting, and adjacent soft-tissue edema vascularity, displaced hilar vessels, and low intranodal vascular resistance are clues that may suggest the tuberculous nature of neck lymph nodes.[6] However, there is overlap of appearance between tuberculous nodes, benign reactive neck nodes, and metastatic nodes. Thus, histologic analysis is often required for a definitive diagnosis.[7] The mean Ultrasound elastography blue area of malignant nodes was statistically significantly higher than that of benign nodes, meaning that higher blue areas within an elastogram indicate malignancy. It was seen that malignant lymph nodes had statistically significantly higher strain ratios compared with benign lymph node; that is, higher strain ratios values indicated malignancy ($p = 0.006$). The mean Strain ratio for malignant nodes was 3.45 whereas that of benign lymph nodes was 1.60.[8] An elastographic scoring system was reported by Farzana Alam et al: Pattern 1, an absent or a very small hard (i.e. blue) area; pattern 2, hard area < 45% of the lymph node; pattern 3, hard area ≥ 45%; pattern 4, peripheral hard and central soft areas;

pattern 5, hard area occupying entire lymph node with or without a soft rim. The pattern 1 and 2 was interpreted as benign (reactive) whereas pattern 3, 4 and 5 was considered malignant.[9]

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Mohapatra PR, Janmeja AK. Tuberculous lymphadenitis. JAPI. 2009;57:585-90.
2. Geldmacher H, Taube C., Kroeger C, Magnussen H, Kirsten DK. Assessment of lymph node tuberculosis in northern Germany: a clinical review. Chest. 2002;121(4):1177-82.
3. Enarson DA, Ashley MJ, Grzybowski S, OstapkowiczE, Dorken E. Non-respiratory tuberculosis in Canada epidemiologic and bacteriologic features. Am J Epidemiol. 1980;112(3):341-51.
4. Lee KC, Tami TA, Lalwani AK, Schecter G. Contemporary management of cervical tuberculosis. Laryngoscope. 1992;102:60-4.
5. Khanna R, Sharma AD, Khanna S, Kumar M, Shukla RC. Usefulness of ultrasonography for the evaluation of cervical lymphadenopathy. World J Surg Oncol. 2011;9(1):29.
6. Ahuja A, Ying M. Sonography of neck lymph nodes. Part II: abnormal lymph nodes. Clin Radiol. 2003;58(5):359-66.
7. Ahuja A, Ying M, Yuen YH, Metreweli C. Power doppler sonography to differentiate tuberculous cervical lymphadenopathy from nasopharyngeal carcinoma. AJNR Am J Neuroradiol. 2001;22:735-40
8. Hasan DI, Ahmed Rasha HA, Mohamed AM. Ultrasound elastography in pathological enlarged cervical lymph nodes compared to histopathology. Egyptian J Radiol Nuclear Med. 2016;47(4):1349-59.
9. Alam F, Naito K, Horiguchi J, Fukuda H, Tachikake T, Ito K. Accuracy of Sonographic elastography in the differential diagnosis of enlarged cervical lymph nodes: comparison with conventional B-mode sonography. AJR. 2008;191:604-10.

Cite this article as: Phatak SV, Gupta N, Phatak P. Tuberculous cervical lymphadenitis (scrofula): usg, doppler and elastographic evaluation: report of two cases. Int J Res Med Sci 2017;5:3257-60.