**Audit on Assessment and Reporting of Cervical Lymph Nodes on Ultrasonography**

**Descriptor**

The objective of this audit is to evaluate and enhance the quality, accuracy, and consistency of ultrasound reports for cervical lymph nodes sonographic assessment. This aims to guide clinical decision-making, prevents unwarranted invasive procedures for lymph nodes lacking suspicious features and facilitates prompt evaluation of abnormal lymph nodes.

**Background**

Ultrasonography is commonly used as a first-line modality to identify and characterise cervical lymph nodes due to high sensitivity and specificity than clinical examination [1,2]. Presence of metastatic cervical nodes confers a significantly inferior survival for patients [1,2].

Ahuja et al. paper published in 2008 is widely recognized as the European standard for interpretation and documentation of cervical lymph node ultrasound characteristics. The findings and principles outlined also serve as a foundation for the recently released American Institute of Ultrasound in Medicine (AIUM) guidelines, further emphasizing its significance in the field [1,2,3]. Routine comprehensive sonographic assessment includes grey-scale assessment for size, morphology, internal architecture etc. Besides, Doppler ultrasonography is important for assessment of vascular pattern. It is important to note that nodal morphology is often more important than nodal size in the evaluation of malignancy [1]. Several parameters for evaluation of abnormal nodes includes size (measured in short axis), shape (short axis/ long axis < or > 0.5), nodal border, presence or absence of echogenic hilum and if any abnormal nodal morphology is present, including but not limited to intranodal calcification, cystic necrosis, and abnormal blood flow pattern on Doppler ultrasonography [1, 2, 3]. The location should be documented according to the nodal classification system developed by the American Joint Committee on Cancer and the American Academy of Otolaryngology - Head and Neck Surgery [3]. Abnormal cervical nodes can be seen in lymphoma and other malignancies, but also seen in acute and chronic infectious and inflammatory disease processes such as post-viral syndromes and Hashimoto thyroiditis [1].

A standardised approach to cervical lymph nodes evaluation ensures consistency in monitoring patients during follow-up studies and facilitates clear communication among healthcare professionals e.g. fine-needle aspiration of abnormal lymph nodes and treatment planning.

To minimise ambiguity in interpretating cervical lymph node reports and guiding clinical decision-making, it is crucial to incorporate details regarding the presence or absence of suspicious features when reporting on cervical lymph nodes.

**The Cycle**

**The standard**

Imaging and documentation the followings:
1. The location/ level of cervical lymph node according to the image-based nodal classification system proposed by the American Joint Committee on Cancer and American Academy of Otolaryngology – Head and Neck Society [3].
2. The size of cervical lymph node in short axis [1, 2, 3].
3. The shape of the lymph node – can be measured with a roundness index: elliptical (short-axis/ long-axis <0.5) or round (short-axis/ long-axis >0.5) [1, 2]?
4. Presence / absence of fatty hilum [1, 2, 3].
5. Presence / absence of central / peripheral vascularity [1, 2, 3].
6. Presence/ absence of intranodal cystic/ coagulation necrosis [1, 2, 3].
7. Presence / absence of intranodal calcification [1, 2, 3]
8. Presence / absence of suspicious features, characterised by enlarged size or abnormal nodal morphology of the cervical lymph node.

**Target**

100% of cervical lymph node ultrasound reports with documentation of identified cervical lymph node should meet these standards.

**Assess local practice**

**Indicators**

1. Percentage of location/ level of the cervical lymph node correctly reported.
2. Percentage of size in short axis of the cervical lymph node reported.
3. Percentage of abnormal shape/ morphology of the node reported.
4. Percentage of documentation of presence / absence of fatty hilum.
5. Percentage of documentation of presence / absence of central / peripheral vascularity.
6. Percentage of documentation of presence / absence of intranodal cystic/ coagulation necrosis.
7. Percentage of documentation of presence / absence of intranodal calcification.
8. Percentage of documentation of presence/ absence of suspicious features, characterised by enlarged size or abnormal nodal morphology of the cervical lymph node.

**Data items to be collected**

1. Is the location/ level of the cervical lymph node correctly reported according to the image-based nodal classification system proposed by the American Joint Committee on Cancer and the American Academy of Otolaryngology - Head and Neck Society [1]?
2. Is the size in short axis of the cervical lymph node reported [1, 2, 3]?
3. Is there abnormal shape/ morphology of the node [1.2]?
4. Is there documentation of presence / absence of fatty hilum [1, 2, 3]?
5. Is there documentation of presence / absence of central / peripheral vascularity [1, 2, 3]?
6. Is there documentation of presence / absence of intranodal cystic/ coagulation necrosis [1, 2, 3]?
7. Is there documentation of presence / absence of intranodal calcification [1, 2, 3]?
8. Is there documentation of presence/ absence of suspicious features, characterised by enlarged size or abnormal nodal morphology of the cervical lymph node?

**Suggested number**

Ultrasound examination for cervical lymph nodes with reports documenting identified cervical lymph nodes should be collected and reviewed. All cases performed during the preceding six months or the most recent 60 consecutive cases (whichever number is greater). Cases with no identifiable cervical lymph node should be excluded.

**Suggestions for change if target not met**

1. Publicise the standards for cervical lymph node ultrasound reporting, through in-person departmental radiology meetings and distribution of printed materials to radiologists and sonographers.
2. Create a structured report template for use during electronic report transcription to improve standardisation of reporting items.
3. Re-audit six months after the intervention, to assess for improvement in practice. Continue the audit spiral to ensure sustained compliance with the standards.

**References**

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