EDITORIALS

Looking for New Features to Improve Accuracy of EUS Lymph Node Criteria

Enrique Vazquez-Sequeiros

Endoscopy Unit, Gastroenterology Service, University Hospital Ramon y Cajal, Madrid, Spain

Correct assessment of the nature of a lymph node in a minimally invasive manner may be extremely difficult. CT scan and endoscopic ultrasound (EUS) have been shown to be two of the most useful diagnostic tools to evaluate if a lymph node is benign or malignant in nature. In fact, EUS, due to its high image resolution, allows one to identify certain features that are not visible by other imaging techniques. There are certain EUS lymph node features (called endosonographic criteria) that have been classically proposed to be suggestive of malignancy [1, 2]. These malignant lymph node criteria are based on size (lymph node width greater than 10 mm), shape (round), echogenicity (echopoor pattern) and lymph node border (smooth) [1, 2]. Although none of these criteria is diagnostic of malignancy alone, the presence of an echopoor pattern and a width > 10 mm have been found to be the most specific EUS criteria for malignancy. Furthermore, it has also been reported that when all four features suggestive of malignancy in lymph nodes are present, there is an 80-100 per cent chance of lymph node malignancy [1, 2]. Unfortunately, only 25 per cent of malignant nodes will present all 4 criteria diagnostic of malignancy [1, 2]. These data ilustrate some of the limitations of current EUS criteria for lymph node staging. It has been suggested by different groups that more accurate EUS criteria and/or biopsy (EUS FNA) of lymph nodes are needed to determine if lymph nodes identified are benign or malignant.

Studies from different institutions have consistently demonstrated that EUS-FNA is safe and accurate for lymph node assessment in the setting of patients with gastrointestinal and pulmonary tumors, reaching a sensitivity, specificity and accuracy that lies above 85 per cent [3, 4]. One of the advantages of EUS FNA over EUS lymph node criteria relies in the fact that one makes the diagnosis of malignancy or not based on the objective interpretation of cytology and not in the subjective interpretation of EUS features. Unfortunately, EUS FNA is not readily available for all patients and hospitals, and when available this technique consumes a significant amount of human and economic resources. For this reason different investigators have focused their research in this field trying to improve lymph node criteria or trying to identify those lymph nodes that may benefit from EUS FNA for diagnosis [5]. Authors have evaluated the diagnostic accuracy of standard (hypoechoic, smooth border, round, or width > 5-10 mm) and modified (4 standard plus EUS identified celiac lymph nodes, > 5 lymph nodes or EUS T3/4 tumor) EUS lymph node criteria, identifying that by adding additional EUS features (T stage, location of the node and number of them identified) one may better differentiate benign and malignant nodes [5]. Furthermore, the same group demonstrated that in those cases with either > 6 or < 1 modified EUS criteria, EUS FNA may be avoided as we may predict with 100% accuracy if the lymph node is malignant or benign in nature, respectively. Therefore, EUS FNA results are unlikely to change lymph node stage and management in these patients [5].

The manuscript presented in this month´s issue of the journal and entitled „Irregular echogenic foci representing coagulation necrosis: a useful but perhaps under-recognized EUS echo feature of malignant lymph node invasion" [6], represents an effort in the same direction. The manuscript attempts to identify features that may allow one to better identify those lymph nodes that are malignant. The manuscript is well designed and written, and attempts to investigate if coagulation necrosis may be identified with EUS by a blinded endosonographer, and if this feature may predict malignancy in mediastinal lymph nodes. In a recent publication, Roberts et al [7] described a new endosonographic feature named coagulation necrosis that may be associated with malignant mediastinal lymph nodes. Coagulation necrosis within a lymph node appears on EUS as an ill-defined, rounded area (different from linear non-shadowing structures seen in benign lymph nodes). Coagulation necrosis is a pathological concept that shows

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Address for correspondence: Enrique Vazquez-Sequeiros MD, PhD
C/ Diego de Torres 9-3A.
Alcala de Henares
28801, Madrid, Spain
E-mail: evazquezs@hotmail.com

some promise and deserves investigation to determine if it should be incorporated to the EUS criteria for lymph node malignancy. The purpose of the study presented in this issue [6] was to evaluate the utility and accuracy of this newly described feature of coagulation necrosis during EUS imaging of mediastinal lymph nodes. In the present study, 33% of patients/lymph nodes evaluated showed EUS features suggestive of coagulation necrosis as scattered non-shadowing echogenic areas within a lymph node. The absence of EUS features of coagulation necrosis did not exclude completely that it was present in the pathology study. In the present study, overall sensitivity of EUS detection of coagulation necrosis as a predictor of malignant invasion of lymph nodes was 54% and specificity reached 90%. As previously mentioned in this editorial, authors of this new study have also reinforced the fact that even though EUS FNA has been shown to be more accurate for prediction of malignancy than EUS echofeatures, the presence of coagulation necrosis may help endosonographers select a more suspcious lymph node for FNA when multiple nodes are visualized by EUS.

Authors present promising results of a new EUS feature for lymph node malignancy, coagulation necrosis. However, these promising results need to be confirmed in prospective and controlled studies before incorporating them into our routine clinical practice. Evaluation of this new feature in conjunction with those previously described (number and location of nodes, etc) and with the four classical lymph node criteria would certainly provide us with useful and clinically meaningful information. Further research on this field is warranted.

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