Predictive factors of malignancy of mediastinal lymph nodes (LN) in a consecutive series of patients referred to a tertiary center for EUS FNA

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AIM
To assess the predictive factors of malignancy of mediastinal LN in a consecutive series of patients referred for EUS FNA in a tertiary care centre.

STUDY POPULATION AND METHODS
Data from all consecutive patients referred from January 2001 to May 2004 for diagnosis or staging of the mediastinum in whom EUS FNA was performed, were collected. Computed variables were the following : age, gender, presence of malignancy and LN characteristics such as location, size (long and short axis), echogenicity (hypoechoic vs non-hypoechoic), shape (round vs non-round) and borders (sharp vs non-sharp).

EUS was performed under conscious sedation with a radial echoendoscope (Olympus GF UM20 and GF UM160) to assess LN features. A linear echoendoscope (Olympus GF UC30P) and a 22-gauge needle (Wilson Cook Medical, Inc.) were then used in order to perform EUS FNA of the evaluated LN. Cytology obtained from EUS FNA was used as gold standard. LN with an uncertain diagnosis or those from which a diagnostic sample could not be obtained had been excluded for the analysis. Variables concerning LN were grouped in different sets of criteria : 1) classic criteria (CICr) : short axis 1 cm or larger, round shape, homogeneous hypoechoic pattern, sharp and distinct borders; 2) CICr + presence of malignancy; 3) CICr + lung cancer; 4) CICr + presence of malignancy + location in regions 5 and/or 7; 5) CICr + lung cancer + location in regions 5 and/or 7, 6) short axis > 1 + presence of malignancy; 7) short axis > 1 + lung cancer; 8) short axis > 1 + presence of malignancy + location in regions 5 and/or 7; 9) short axis > 1 + lung cancer + location in regions 5 and/or 7. Size (short and long axis) as a quantitative variable showed the best AUC (=0.91; 95 % CI 0.85, 0.98).

RESULTS
112 LN were evaluated in 73 patients (68 M/5 F), with a mean age of 63 ± 9. Fifty nine patients (81 %) were evaluated for staging of a known malignancy (lung cancer n = 50, esophageal cancer n = 6 other neoplasms n = 3), and the remaining 14 (19 %) for diagnostic purposes. Thirty nine LN were excluded for inconclusive cytologic diagnosis. Of the analysed 73 LN, 47 (64 %) were benign and the remaining 26 (36 %) malignant by means of cytology obtained by EUS FNA. Location of the LN was as follows : station 7, n = 28 (38 %); station 8, n = 17 (23 %); station 5, n = 16 (22 %); and others, n = 12 (17 %).

Long and short axis of the LN and hypoechoic pattern were the only variables significantly different between benign and malignant LN (1.1 ± 0.6 vs 2.7 ± 1.7 and 0.7 ± 0.4 vs 1.7 ± 1, respectively, p = 0.001). ROC showed an area under the curve (AUC) of 0.71 for the CICr and < 0.8 for all sets of other criteria but one (short axis of the LN > 1 + malignancy : AUC = 0.86). However, size of the LN as assessed by the short axis as a quantitative variable showed the best AUC (=0.91; 95 % CI 0.85, 0.98).

CONCLUSIONS
Short axis of the LN is the best predictor of malignancy in mediastinal LN. As a set of criteria, short axis of LN > 1 cm + the presence of a malignancy is a better predictor of metastatic LN than the classic EUS criteria.
Endoscopic ultrasonography (EUS) vs magnetic resonance cholangiopancreatography (MRCP) in the diagnosis of pancreatobiliary disturbances with and without dilated biliary tract: definitive results of a prospective, blinded and comparative study


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AIMS

To prospectively and blindly compare the performance characteristics of EUS and MRCP: 1) in the etiologic diagnosis of the dilated biliary tract and 2) in the diagnosis of choledocolithiasis in patients with non-dilated biliary tract.

STUDY DESIGN AND METHODS

From March 2001 to June 2004, patients meeting one of the following inclusion criteria were prospectively enrolled: 1) Unexplained common bile duct dilation in transabdominal ultrasound (US) (Group I; n = 74) and 2) High suspicion of choledocolithiasis (fever, abdominal pain and hepatic tests impairment or acute pancreatitis of probable biliary origin) with a non-dilated biliary tract on US (Group II; n = 79). Patients with personal history of claustrophobia or gastroenteroanastomosis and peace-maker carriers were excluded. Radial EUS (Olympus GF UM20 and GF UM160) and MRCP with SSFSE technique were performed within a 24-hour period. The sequence of the two techniques was randomly assigned and the operators were blinded with respect to the results of the other procedure. Gold standard was endoscopic retrograde cholangiopancreatography (ERCP) (n = 89), surgery with intraoperative cholangiography when needed (n = 24) or clinical follow-up (n = 35).

RESULTS

153 patients (67 men, 86 women) with a mean age of 68 ± 15 were included. Mean time between EUS/MRCP and ERCP or surgery was 11 ± 13 and 30 ± 31 days respectively. Mean follow-up in patients in whom this was considered as gold standard was 5.8 ± 3.9 months. Two patients in Group I and four in Group II were considered lost before a definitive diagnosis (death for other reasons n = 3, lost of follow-up n = 3). EUS could not be performed in 6 patients for severe medical problems after inclusion (n = 4), non-reported history of surgery (n = 1) or stenosis of the digestive tract (n = 1), whereas MRCP could not be completed in 7 patients for unexpected claustrophobia. Therefore, a total of 65 and 69 patients were evaluated in Groups I and II respectively for the analysis. Final diagnosis was choledocolitiasis (Group I/II: n = 36/30), cholelithiasis without choledocolithiasis (Group I/II: n = 8/38), pancreatic cancer (Group I/II: n = 18/3), cancer of the biliary tract (Group I/II: n = 5/3), chronic pancreatitis (Group I/II: n = 2/0) and others (Group I/II: n = 1/1). Performance characteristics of EUS and MRCP in the two study groups are showed in the following table:

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<tr>
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<th>Group I</th>
<th>Group II</th>
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<td>Se</td>
<td>Sp</td>
</tr>
<tr>
<td>EUS</td>
<td>100%</td>
<td>71%</td>
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<tr>
<td>MRCP</td>
<td>88%</td>
<td>71%</td>
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*p McNemar’s test: p < 0.05

CONCLUSIONS

EUS and MRCP are good techniques for the diagnosis of pancreatobiliary disturbances in patients with and without biliary tract dilation. EUS is more accurate than MRCP for the etiologic diagnosis in patients with dilation of the biliary tract.