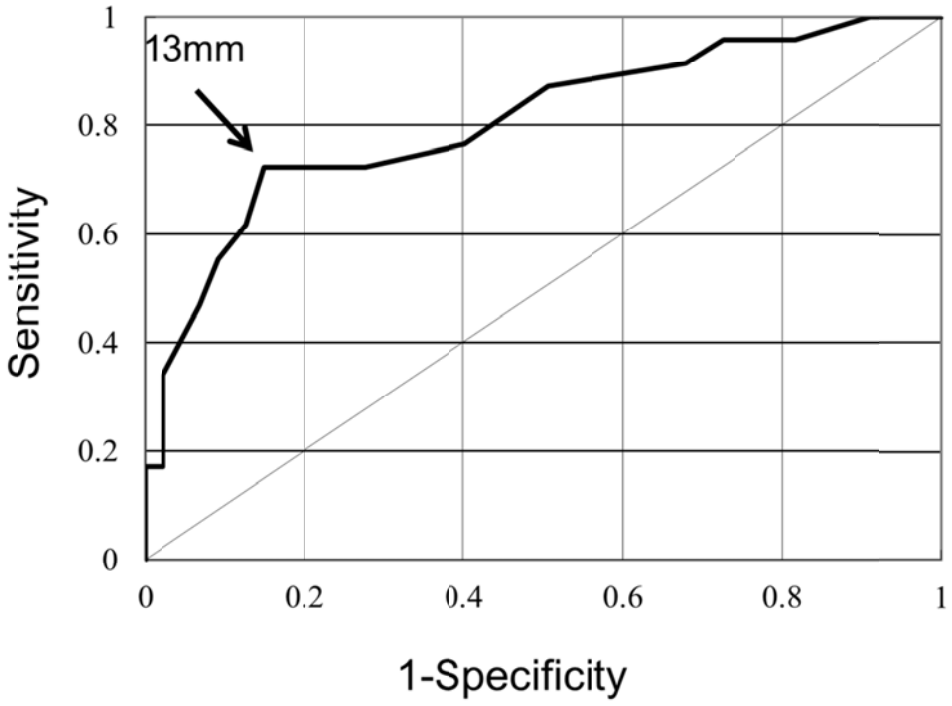
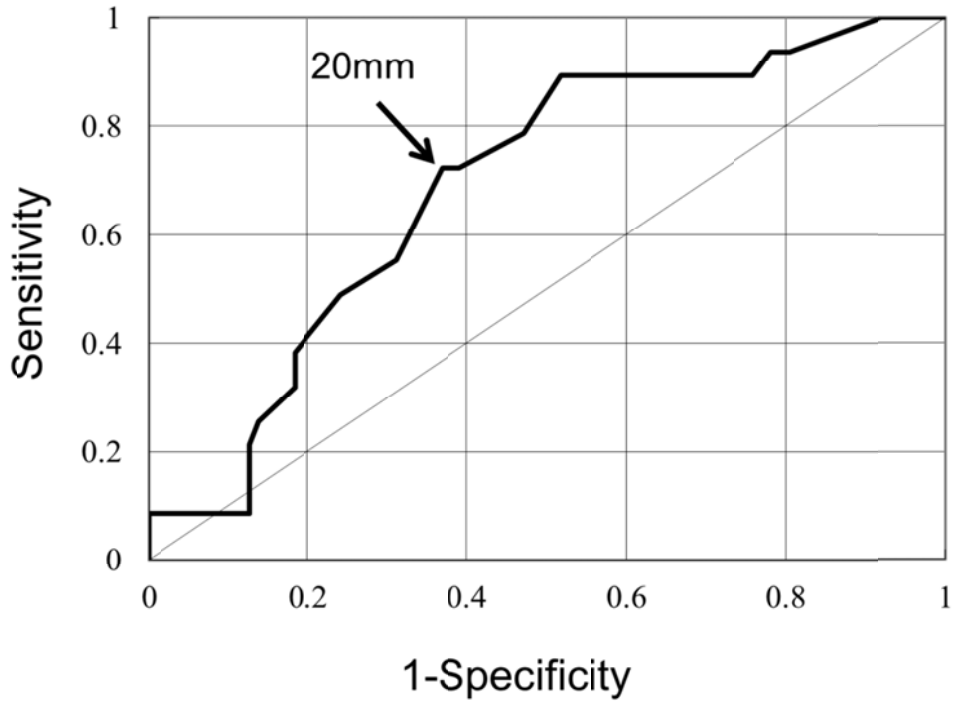



**Supplementary Figure 1** Receiver-operating characteristic curve that shows how short axis cut-offs of 10, 11, 12, 13, 14 or 15 mm differentiate malignant from benign lymph node. The best cut-off value (13 mm) is indicated by the black arrow.




**Supplementary Figure 2** Receiver-operating characteristic curve that shows how long axis cut-offs of 17, 18, 19, 20, 21 or 22 mm differentiate malignant from benign lymph node. The best cut-off value (20 mm) is indicated by the black arrow.

| | | Reader B (H.I) | | |
|---|---|---|---|---|
| | | Round | Oval | Total |
| Reader A (M.Kudo) | Round | 39 | 17 | 56 |
| | Oval | 7 | 71 | 78 |
| | Total | 46 | 88 | 134 |

κ coefficient : 0.63

**Supplementary Table 1-1** This 2 × 2 Table shows the inter-observer agreement between the two readers in terms of the shape variable.

| | | Reader B (H.I) | | |
|---|---|---|---|---|
| | | Sharp | Fuzzy | Total |
| Reader A (M.Kudo) | Sharp | 85 | 10 | 95 |
| | Fuzzy | 17 | 22 | 39 |
| | Total | 102 | 32 | 134 |

κ coefficient : 0.49

**Supplementary Table 1-2** This 2 × 2 Table shows the inter-observer agreement between the two readers in terms of the edge characteristics variable.

| | | Reader B (H.I) | | |
|---|---|---|---|---|
| | | Hypo | Hyper | Total |
| Reader A (M.Kudo) | Hypo | 54 | 15 | 69 |
| | Hyper | 10 | 55 | 65 |
| | Total | 64 | 70 | 134 |

κ coefficient : 0.47

**Supplementary Table 1-3** This 2 × 2 Table shows the inter-observer agreement between the two readers in terms of the echogenicity variable.

| | | Reader B (H.I) | | |
|---|---|---|---|---|
| | | CIV absent | CIV present | Total |
| Reader A (M.Kudo) | CIV absent | 45 | 11 | 56 |
| | CIV present | 9 | 69 | 78 |
| | Total | 54 | 80 | 134 |

κ coefficient : 0.69

**Supplementary Table 1-4** This 2 × 2 Table shows the inter-observer agreement between the two readers in terms of the color Doppler EUS variable (presence/absence of CIV).

| | | Reader B (H.I) | | |
|---|---|---|---|---|
| | | Hetero | Homo | Total |
| Reader A (M.Kudo) | Hetero | 39 | 10 | 49 |
| | Homo | 2 | 83 | 85 |
| | Total | 41 | 93 | 134 |

κ coefficient : 0.81

**Supplementary Table 1-5** This 2 × 2 Table shows the inter-observer agreement between the two readers in terms of the CH-EUS variable (heterogeneous/homogeneous enhancement).

| | | CH-EUS (Heterogeneous) | |
|---|---|---|---|
| | | correct | incorrect |
| Short axis (13mm or longer) | correct | 96 | 12 |
| | incorrect | 22 | 4 |

**Supplementary Table 2-1** This 2 × 2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard EUS-determined short axis length in terms of differentiating malignant from benign lymph nodes.

| | | CH-EUS(Heterogeneous) | |
|---|---|---|---|
| | | correct | incorrect |
| Long axis (20mm or longer) | correct | 76 | 13 |
| | incorrect | 42 | 3 |

**Supplementary Table 2-2** This 2 × 2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard-EUS-determined long axis length in terms of differentiating malignant from benign lymph nodes.

| | | CH-EUS(Heterogeneous) | |
|---|---|---|---|
| | | correct | incorrect |
| Shape (Round) | correct | 84 | 10 |
| | incorrect | 34 | 16 |

**Supplementary Table 2-3** This 2 × 2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard EUS-determined shape in terms of differentiating malignant from benign lymph nodes.

| | | CH-EUS(Heterogeneous) | |
|---|---|---|---|
| | | correct | incorrect |
| Edge characteristics (Sharp) | correct | 50 | 14 |
| | incorrect | 68 | 2 |

**Supplementary Table 2-4** This 2 × 2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard EUS-determined edge characteristics in terms of differentiating malignant from benign lymph nodes.

| | | CH-EUS(Heterogeneous) | |
|---|---|---|---|
| | | correct | incorrect |
| Echogenicity (Hypoechogenicity) | correct | 74 | 10 |
| | incorrect | 44 | 6 |

**Supplementary Table 2-5** This 2 × 2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard EUS-determined echogenicity in terms of differentiating malignant from benign lymph nodes.

| | | CH-EUS(Heterogeneous) | |
|---|---|---|---|
| | | correct | incorrect |
| Color Doppler (CIV absent) | correct | 87 | 9 |
| | incorrect | 31 | 7 |

**Supplementary Table 2-6** This 2 × 2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and Color Doppler EUS (absence of a central intranodal vessel) in terms of differentiating malignant from benign lymph nodes.

**Video legends**

**Video 1** A typical example of a lymph node with heterogeneous enhancement.

**Video 2** A typical example of a lymph node with homogeneous enhancement.

**Supplementary files**

**Supplementary Figure 1** Receiver-operating characteristic curve that shows how short axis cut-offs of 10, 11, 12, 13, 14 or 15 mm differentiate malignant from benign lymph node. The best cut-off value (13 mm) is indicated by the black arrow.

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**Supplementary Table 1-1** This 2x2 Table shows the inter-observer agreement between the two readers in terms of the shape variable.

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**Supplementary Table 2-1** This 2x2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard

EUS-determined short axis length in terms of differentiating malignant from benign lymph nodes.

**Supplementary Table 2-2** This 2x2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard-EUS-determined long axis length in terms of differentiating malignant from benign lymph nodes.

**Supplementary Table 2-3** This 2x2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard EUS-determined shape in terms of differentiating malignant from benign lymph nodes.

**Supplementary Table 2-4** This 2x2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard EUS-determined edge characteristics in terms of differentiating malignant from benign lymph nodes.

**Supplementary Table 2-5** This 2x2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and standard EUS-determined echogenicity in terms of differentiating malignant from benign lymph nodes.

**Supplementary Table 2-6** This 2x2 Table shows the number of discordances between CH-EUS (heterogeneous enhancement) and Color Doppler EUS (absence of a central intranodal vessel) in terms of differentiating malignant from benign lymph nodes.