



가  
2 78 20  
98  
2.2 ± 0.7(1.6-2.7), 2.4 ± 0.8(1.6-3.1)mm,  
5.9 ± 1.4(4.5-7.3), 5.2 ± 1.3(3.9-6.4)mm 7.9 ±  
2.1(5.8-9.9)mm, 14.0 ± 1.8(12.3-24.0)mm  
(p<0.01).

가 6mm 15mm  
15-20% 30-60% 가  
(1-3).  
44(26-60) 46(38-54)  
78 42 (54%), 36  
(46%) 20 14 (70%), 6  
(30%)

1997 1 1998 12 2  
78 20 ( CwRC(-) 2.4 ± 0.8(1.6-3.1)mm, 2.2 ± 0.7(1.6-2.7),  
)F2Li 18 , CwRC(+)F2Li 2 ) 98 5.2 ± 1.3(3.9-6.4)mm 5.9 ± 1.4(4.5-7.3),  
9.9)mm, 14.0 ± 1.8(12.3-24.0)mm 7.9 ± 2.1(5.8-  
(p<0.01).  
가 가 62 (80%),  
(transverse and longitudinal) 가 26 (20%) (Fig. 1),  
20 (Fig. 2).

1  
2  
3

1998 10 8 1999 1 29

(circular smooth muscle),  
(Longitudinal smooth muscle),  
(9) 3  
3  
(palisading zone) 2-4cm  
(4).  
1.25cm (in-  
traabdominal portion of esophagus)  
( )  
(5) 3  
Bolondi (6)  
balloon  
가 7.5MHz 12MHz  
Larry (8) 5  
7 6  
(circular smooth muscle),  
(Longitudinal smooth muscle),  
(9) 3  
3  
(4).  
1.0-2.5mm  
( / )  $2.2 \pm 0.7/2.4 \pm$   
0.8mm,  $7.9 \pm 2.1\text{mm}$ ,  
( / )  $5.9 \pm 1.4/5.2 \pm 1.3\text{mm}$ ,  
 $14.0 \pm 1.8\text{mm}$ .  
(Cw), (RC(-)),  
(F2), 1/3  
가  
가 6mm  
15mm



Fig. 1. A transverse ultrasonogram of the epigastrium shows eagle-beak appeared normal esophagus with three echogenic layer between the left hepatic lobe and aorta. Anteroposterior diameter is 5.6mm(arrows).



Fig. 2. A longitudinal ultrasonogram of the epigastrium shows irregular tortuous thickened mucosal layer, increased mural thickness. Anteroposterior diameter of esophagus is 22mm(arrows).

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## Ultrasonographic Findings of Esophageal Varices<sup>1</sup>

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**Purpose :** To demonstrate the clinical usefulness of ultrasonography for detecting esophageal varices.

**Materials and Methods :** In 20 cases of esophaged varix, the authors analysed the transabdominal ultrasonographic findings of the esophagogastric junction and compared mural thickness, the anteroposterior diameter of the esophagus, and the echogenic nature of the esophageal mucosal layer with those of 78 normal patients.

**Results :** The anterior and posterior mural thickeness of normal esophagus was  $2.2 \pm 0.7$  and  $2.4 \pm 0.8$ mm respectively, but for variceal esophagus, the corresponding readings were  $5.9 \pm 1.3$  and  $5.2 \pm 1.3$ mm respectively. The anteroposterior diameter of normal esophagus was  $7.9 \pm 2.1$ mm and that of variceal esophagus was  $14.0 \pm 1.8$ mm. There was a stastically significant difference ( $p < 0.01$ ) in mural thickness and anteroposterior diameter of the esophagus between a normal and variceal patient with regard to change of echogenic nature at the esphagogastric junction. Normal esophageal mucosa showed a thin and uniform echogenic line, but for variceal mucosa, the echogenic pattern was irregular, tortuous and thick.

**Conclusion :** The athors believe that transabdominal US is helpful for detecting esophageal varices in patients with liver cirrhosis and UGI bleeding. Important clinically useful sonographic findings in diagnosing esophageal varix are as follows: 1) mural thickness more than 6mm; 2) anteroposterior diameter of the esophagus of more than 15mm; 3) irregular, tortuous and thickened echogenic mucosa.

**Index words :** Esophagus, US  
Esophagus, anatomy  
Esophagus, varix

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