

Except in those who died due to hepatic coma or rebleeding prior to obliteration, EIS eradicated the varices in more patients than did EVL, although the difference is not significant. Occasionally during EVL, it was difficult to entrap the esophageal mucosal tissue with the O-ring when the varices were of minimal size (F1) and hence, we experienced difficulty in eradicating these small varices. However, we found that EVL patients needed fewer treatment sessions to eradicate varices as compared to EIS patients ( $4.2 \pm 1.4$  vs.  $3.1 \pm 1.2$ ). EVL also eradicated varices faster than did EIS in this study. The EVL may possess advantages over EIS as to both outcomes and economics.

Mortality rates were similar in both groups. The absence of any effect of endoscopic treatment on mortality in this trial is at variance with other reports.<sup>9,20</sup> The mortality rate was clearly correlated with Child-Pugh grade at admission, with fewer deaths occurring in patients at grade A than at grades B and C (Table 5). Similar results have been reported by other investigators<sup>11,21,22</sup> and suggest that good liver function is more important in determining survival than any form of endoscopic treatment itself.

EVL has its own particular limitations. It requires placement of a cylinder over the end of the endoscope. This decreases the endoscopic field of view and may allow pooling of blood which further obscures the endoscopist's view. Thus a patient with active bleeding at the time of endoscopy may be more easily treated initially with EIS than with EVL.<sup>23,24</sup> Also, EVL eradicates only large varices, whereas eradication of small varices, as well as fibrosis of the inner wall of the esophagus are not achieved. A higher recurrent rate in EVL patients was suggested<sup>12</sup> because EVL does not produce enough injury to the muscularis propria to obliterate the perforating channel. Although we found no significant difference between the 2 groups regarding the recurrence rate of esophageal varices after eradication in this 1-year study, long-term follow-up may show some differences.

## CONCLUSIONS

The results of this prospective randomized trial suggest that EIS and EVL treatment modalities are equally effective in the control of acute variceal bleed-

ing and eradication of varices. The trial has also shown that EVL has certain advantages over EIS, namely faster eradication of varices, a lower rate of rebleeding, and fewer complications. However, the recurrence of varices after obliteration needs further long-term study.

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