

# Endoscopic Ligation of Esophageal Varices (EVL) Compared with Endoscopic Injection Sclerotherapy (EIS)

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## Özet : ÖZOFAGUS VARİS TEDAVİSİNDE ENDOSKOPIK SKLEROTERAPİ İLE ENDOSKOPIK LİGASYON'UN KARŞILAŞTIRILMASI

EVL ve EIS nun özafagus varis eradikasyonu için etkinliklerini ve komplikasyonlarını karşılaştırmak amacı ile bu prospektif çalışma planlandı. Özofagus varis kanama öyküsü veya aktif varis kanaması olan 74 hasta çalışmaya alındı. Otuz dokuz hasta EVL, 35 hasta EIS ile tedavi edildi. EVL grubundan 11 hasta daha sonra EIS ile tedavi edildiği için çalışma dışı bırakıldı. Her iki yöntemle de inisyal hemostaz sağlandı. Varis eradikasyonu için EVL grubunda 2,3 seans EIS grubunda 5,85 seans gerekti. EIS grubundan 5 hastada özafageal striktür gelişti. Her iki yöntem arasında varis eradikasyonu etkinliği yönünden önemli bir fark görülmezken striktür komplikasyonu EIS grubunda anlamlı şekilde fazla görüldü.

**Anahtar kelimeler:** Endoskopik varis ligasyonu, endoskopik skleroterapi, özafagus varisi

The treatment of esophageal varices bleeding due to portal hypertension has continued to evolve. Within the last decade EIS has become the first line and often the definitive treatment for variceal bleeding. Complications of EIS occur in up to 20% or more of patients. Therefore a recently developed non-operative alternative to EIS is EVL (1, 2). This procedure is generally considered safer and fewer local and systemic complications than EIS (3, 4).

The purpose of this prospective study was compared efficacy and related complications of EVL and EIS.

## MATERIAL AND METHOD

From October 1992 to July 1993 74 patients with portal hypertension and a history of gastrointestinal bleeding or actively bleeding from esophageal

**Summary:** We carried out a prospective trial to compare efficacy and related complications of EVL and EIS. Seventy-four patients with a history of gastrointestinal bleeding or actively bleeding from esophageal varices entered the study. Thirty nine patients treated with EVL and 35 treated with EIS.

Eleven patients from EVL group were excluded the trial because they were treated with EIS later. In all patients with active bleeding initial hemostasis was achieved by two treatment modality. EVL patients required 2.3 sessions of therapy to achieve the obliteration whereas EIS patients required 5.85 sessions. Stricture formation was seen in 5 of EIS and none of EVL patients. It was noted no significant difference between the two groups with regard to achieve obliteration or initial hemostasis but significant difference with regard to stricture formation.

**Key words:** Endoscopic ligation, endoscopic injection sclerotherapy, esophageal varices

geal varices entered the study. Thirty nine patients were treated with EVL and 35 with EIS. All patients were assigned into class A,B or C of grading system of Child. Diagnostic endoscopy was first performed (olympus GIF XQ20 gastro-scope) after topical anesthesia with 8% xylocaine, variceal size was graded from I to IV (1, <3mm; II, 4 to 6; III, 7 to 10 and IV, > 10 mm in diameter) at initial and each treatment session. If an actively bleeding varix was found at the preliminary assessment it was performed with an endoscopic ligating device. Ligations were confined to the distal 5 cm of the esophagus. Four or 8 ligations were done each session. EIS was performed using 1% aetoxysclerol. Two procedures were repeated every 2 weeks until obliteration of all variceal channels was achieved. After obliteration patients were controlled every three months. Statistical analysis was made student's t test.

**Table I:** Clinical characteristics.

Characteristic	EVL	EIS
Number of patients	39	35
Age (years)	41.22	41.02
Sex (M/F)	26/13	26/9
Liver Disease		
Cirrhosis	37	34
Portal ven thrombosis	2	1
Child's classification		
Child A	12	13
Child B	13	9
Child C	14	13
Indication: Elective	34	29
Active bleeding	5	6

## RESULTS

The clinical characteristics of the two groups are given in Table 1. The two groups were comparable with regard to age, size and severity of liver disease.

Eleven patients from EVL group were excluded the trial because they were treated with EIS later. In all patients with active bleeding initial hemostasis was achieved by two treatment modality.

For 28 patients which were treated with EVL, a total of 340 rubber band ligations have been done 65 EVL sessions. The number of sessions and ligations are shown in Table 2.

EVL compared with EIS is that fewer treatment sessions were needed to obliterate esophageal varices.

In all patients complete eradication of the varices was achieved. Rebleeding during of treatment period was occurred in 4 patients of each group. One patient of EVL group and 2 patients of EIS group were died because advancing of primary disease.

## COMPLICATIONS

Retrosternal pain was observed in one patient of EVL group, 2 patients of EIS group. Plevral effusion and stricture formation were seen in one and 5 patients of EIS respectively and none of EVL patients. Post ligation esophageal ulcer bleeding was seen in one patient and was controlled by injection sclerotherapy. Overtube couldn't been advanced in one patient and ligation was performed without overtube. Generally

**Table II:** Number of sessions and ligations of EVL and EIS.

	EVL(n= 28)	EIS (n= 35)
Total number of sessions	65	204
Mean number of sessions	2.3±1.4	5.86±1.3
Total number of ligations	340	
Mean number of ligations	12.1	

our patients didn't well tolerate the overtube. Complications are shown in Table 3.

## DISCUSSION

EVL appears to be effective for control of active esophageal variceal bleeding and for prevention of recurrent bleeding (5). Comparing EVL to EIS show comparable efficacy but EVL may carry a lower complication rate. But recently case reports were showed serious post ligation ulcer bleeding and overtube complications (6). Our one patient had a serious bleeding from postligation ulcer.

One possible advantage if EVL compared with EIS is that fewer treatment sessions may be needed to obliterate esophageal varices (4, 5). EVL appears to be a promising technique for treatment of esophageal varices. Preliminary studies suggest that it requires fewer sessions of obliteration and may have a lower incidence of nonbleeding complications. However disadvantages of EVL are that small varices couldn't be ligated, possible high recurrence rate in the long term because esophageal wall may not be sclerosis enough and the ligation attachment may significantly reduced the field of view due to a narrowed visual angle (3–8). Additionally the overtube wasn't were tolereated by our patients.

**Table III:** Complications.

	EVL	EIS
Stricture formation	-	5
Pleural effusion	-	1
Retrosternal pain	1	2
Postprosedure ulser bleeding	1	-

Like other new techniques the true incidence of EVL associated complications will only be known after the technique is widely used or until it has been extensively evaluated in large controlled trials (8-11). The two methods have

advantages and disadvantages, therefore one of them is not recommended as an alternative treatment each other but some combination of them two methods may be optimal treatment of esophageal varices (8).

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