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论著

超声内镜检查术对食管-胃底静脉曲张患者食管静脉曲张套扎术治疗效果的评价

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摘要: 目的 应用超声内镜检查术(EUS)对接受食管静脉曲张套扎术(EVL)的乙型肝炎肝硬化伴食管-胃底静脉曲张(EGV)患者的治疗效果进行评价。**方法** 选取2019年6月-2021年12月该院接受EVL治疗,并定期来院进行胃镜或EUS复诊的乙型肝炎肝硬化伴EGV患者64例(男42例,女22例),年龄54.0(41.0, 70.0)岁。依据患者的EVL治疗效果,分为正常组($n=25$)和不良组($n=39$),对两组患者一般资料、实验室指标及EUS表现进行单因素和多因素分析。**结果** 正常组年龄为51.0(37.0, 60.0)岁,小于不良组的60.0(43.0, 72.0)岁,差异有统计学意义($P<0.05$);不良组血红蛋白(Hb)为107.0(91.0, 122.0)g/L,低于正常组的116.0(102.0, 141.0)g/L,差异有统计学意义($P<0.05$);不良组胃旁静脉、胃穿支静脉和食管穿支静脉发生率分别为56.4%(22例)、59.0%(23例)和64.1%(25例),与正常组的28.0%(7例)、20.0%(5例)和36.0%(9例)比较,差异均有统计学意义($P<0.05$)。将上述差异有统计学意义的因素纳入多因素分析,结果显示:年龄、胃旁静脉、胃穿支静脉及食管穿支静脉为影响接受EVL的乙型肝炎肝硬化伴EGV患者治疗效果的独立危险因素。**结论** 胃旁静脉、胃穿支静脉和食管穿支静脉的存在,是接受EVL治疗的乙型肝炎肝硬化伴EGV患者治疗效果不佳的EUS特征,早期鉴别有助于改善患者预后。

关键词: 食管-胃底静脉曲张; 超声内镜检查术; 食管静脉曲张套扎术; 多因素分析

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Evaluation of therapeutic effect of endoscopic ultrasonography on esophageal varices ligation in patients with esophago-gastric fundal varices

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Abstract: Objective Endoscopic ultrasonography (EUS) was used to evaluate the therapeutic effect of esophageal varices ligation (EVL) on patients with hepatitis B cirrhosis with esophago-gastric fundal varices (EGV). **Methods** From June 2019 to December 2021, 64 patients (42 males and 22 females, respectively) with hepatitis B cirrhosis with EGV who received EVL treatment and came to the hospital for gastroscopy or EUS follow-up visit, aged 54.0 (41.0, 70.0) years. According to the response of endoscopic treatment, the cases were divided into two groups: normal response group ($n=25$) and adverse response group ($n=39$). The general data, laboratory indicators and EUS performance of the two groups were analyzed by univariate and multivariate analysis. **Results** The age of the normal response group was 51.0 (37.0, 60.0) years, which was lower than that of the adverse response group 60.0 (43.0, 72.0) years, with statistical significance ($P<0.05$). The hemoglobin (Hb) in the adverse response group was 107.0 (91.0,

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122.0) g/L, which was lower than that in the normal response group 116.0 (102.0, 141.0) g/L, with statistical significance ($P < 0.05$). The incidence rates of gastric paraesophageal vein, gastric perforating branch vein and esophageal perforating branch vein in the adverse response group were 56.4% (22 cases), 59.0% (23 cases) and 64.1% (25 cases), respectively, compared with 28.0% (7 cases), 20.0% (5 cases) and 36.0% (9 cases) in the normal response group, with statistical significance ($P < 0.05$). The results showed that age, gastric paraesophageal vein, gastric perforating branch vein and esophageal perforating branch vein were independent risk factors affecting the treatment response of EGV patients with hepatitis B cirrhosis treated by EVL. **Conclusion** Gastric paraesophageal vein, gastric perforating branch vein and esophageal perforating branch vein are EUS features of adverse response of EGV patients with hepatitis B cirrhosis treated with EVL. Early screening of them will help to improve the overall prognosis of patients.

Keywords: esophago-gastric fundal varices; endoscopic ultrasonography; esophageal varices ligation; multivariate analysis

食管-胃底静脉曲张 (esophago-gastric fundal varices, EGV) 出血是门静脉高压症最为致命的并发症之一^[1-2], 超过50%的门静脉高压症患者在病程发展中会出现EGV。超声内镜检查术 (endoscopic ultrasonography, EUS) 将内镜成像和超声相结合, 可以充分地评估门静脉系统和侧支循环的情况, 从而提供更有价值的血液动力学信息^[3-4]。EUS下介入治疗被推荐为控制EGV破裂出血的治疗方式。其中就包括了食管静脉曲张套扎术 (esophageal variceal ligation, EVL)^[5]。尽管临床采用了适当的二级预防治疗, EGV再出血风险仍高达50%~60%, 相关死亡率为33%^[6-8]。目前, 临床上推荐使用内镜治疗来预防EGV再出血。本次研究旨在应用EUS对接受EVL的乙肝肝硬化伴EGV患者的治疗效果进行评价。现报道如下:

1 资料与方法

1.1 一般资料

选取2019年6月-2021年12月于本院接受EVL治疗, 并定期来院进行胃镜或EUS复诊的乙肝肝硬化伴EGV患者64例。其中, 男42例, 女22例, 年龄54.0 (41.0, 70.0) 岁。依据患者的内镜治疗效果进行分组。其中, 不良组 ($n = 39$) 为来院前存在静脉曲张再出血, 表现为黑便或呕血, 随后EUS检查显示存在3级及以上EGV, 或有明显红色征者; 其余病例为正常组 ($n = 25$)。

纳入标准: 经影像学证实存在肝硬化门静脉高压症; 经影像学或内镜证实为中重度食管和(或)胃底静脉曲张。排除标准: 伴有血液系统疾病者; 不能耐受或有介入和内镜检查禁忌证; 合并存在严重器质性疾病者; 既往接受其他门静脉高压症干预治疗者。本

研究经北京积水潭医院医学伦理委员会审批同意, 患者或家属签署知情同意书。

1.2 EVL治疗

术前动态监测心电图, 完成各项指标检测, 在卡氏功能状态评分 ≥ 70 分、生命体征平稳和凝血功能指标无异常后开始手术。嘱患者取左侧卧位, 使用电子胃镜 (生产厂家: 奥林巴斯, 型号: GIF-XQ140) 行常规胃镜检查, 明确食管曲张静脉的位置和程度后, 退镜。安装套扎器 (生产厂家: 威尔逊-库克医学公司), 再次进镜至贲门口上方约5 cm处, 利用内镜透明帽抵住曲张静脉, 在负压吸引后旋转牵引钮, 当听到“咔”的声音后注入少量气体, 曲张静脉呈现深紫色时, 表示套扎成功。随后根据病变部位依次套扎, 查看无出血后, 退镜^[9-10]。

1.3 疗效评判

1.3.1 治疗效果正常 EUS下完全看不到静脉曲张或仍可见细小血管残留, 消化道黏膜呈现基本色泽, 红色征消失。

1.3.2 治疗效果不良 与治疗前相比, 曲张静脉形态和/或红色征未发生改变。

1.4 观察指标

1.4.1 一般资料 包括: 年龄、性别、Child-Pugh分级、是否存在门静脉血栓、是否合并肝脏恶性肿瘤以及腹水等。

1.4.2 实验室指标 包括: 血小板 (platelet, PLT)、血红蛋白 (hemoglobin, Hb)、白蛋白 (albumin, ALB)、谷丙转氨酶 (glutamic-pyruvic transaminase, GPT)、谷草转氨酶 (glutamic-oxaloacetic transaminase, GOT)、总胆红素 (total bilirubin, TBil)、血清肌酐 (serum creatinine, Scr)

和凝血酶原时间 (prothrombin time, PT)。其中,全自动血液分析仪(生产厂家:贝克曼库尔特公司,型号:LH780型)用于检测血细胞水平,全自动生化分析仪(生产厂家:日立公司,型号:7600型)用于检测血生化指标,全自动凝血分析仪(生产厂家:罗氏公司,型号:Cobas t511和t711)用于检测凝血指标。

1.4.3 EUS 表现 包括:胃旁静脉、胃穿支静脉和食管穿支静脉等。

1.5 统计学方法

采用SPSS 22.0软件分析数据。不符合正态分布的计量资料以中位数(四分位数)[$M(P_{25}, P_{75})$]表示,采用Mann-Whitney U 检验进行比较;计数资料以例(%)表示,采用 χ^2 检验进行比较。采用多因素Logistic回归分析影响接受EVL的乙肝肝硬化伴EGV

患者治疗效果的因素。 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 影响接受EVL的乙肝肝硬化伴EGV患者治疗效果的单因素分析

不良组和正常组年龄、Hb、胃旁静脉、胃穿支静脉以及食管穿支静脉等比较,差异均有统计学意义($P < 0.05$)。见表1。

2.2 影响接受EVL的乙肝肝硬化伴EGV患者治疗效果的多因素分析

将单因素分析中差异有统计学意义的各项因素纳入多因素分析,结果显示:年龄、胃旁静脉、胃穿支静脉和食管穿支静脉为影响接受EVL的乙肝肝硬化伴EGV患者治疗效果的独立危险因素。见表2。

表 1 影响接受EVL的乙肝肝硬化伴EGV患者治疗效果的单因素分析

Table 1 Single factor analysis of influencing factors of effect of hepatitis B cirrhosis patients with EGV who received EVL treatment

组别	性别 例(%)		年龄/岁	Child-Pugh 评分/分	门静脉血栓 例(%)	
	男	女				
不良组($n = 39$)	26(66.7)	13(33.3)	60.0(43.0, 72.0)	6.0(4.0, 9.0)	9(23.1)	
正常组($n = 25$)	16(64.0)	9(36.0)	51.0(37.0, 60.0)	6.0(4.0, 8.0)	4(16.0)	
χ^2/Z 值	-0.05 [†]		2.33	-0.24	-0.47 [†]	
P 值	0.827		0.020	0.808	0.492	
组别	肝脏恶性肿瘤 例(%)	腹水 例(%)	PLT/($\times 10^9/L$)	Hb/(g/L)	ALB/(g/L)	
不良组($n = 39$)	3(7.7)	15(38.5)	66.0(48.0, 102.0)	107.0(91.0, 122.0)	38.2(37.0, 39.0)	
正常组($n = 25$)	1(4.0)	7(28.0)	73.0(54.0, 142.0)	116.0(102.0, 141.0)	38.6(37.5, 39.7)	
χ^2/Z 值	-0.35 [†]	-0.74 [†]	1.67	2.18	0.25	
P 值	0.552	0.390	0.095	0.030	0.805	
组别	GPT/(u/L)	GOT/(u/L)	TBil/($\mu\text{mol/L}$)	Scr/($\mu\text{mol/L}$)	PT/s	
不良组($n = 39$)	27.0(16.0, 42.0)	34.0(18.0, 50.0)	20.8(17.2, 26.3)	76.7(60.8, 108.4)	13.9(12.4, 16.8)	
正常组($n = 25$)	29.0(18.0, 40.0)	34.0(20.0, 45.0)	18.4(17.7, 24.4)	72.0(56.1, 92.7)	13.4(12.1, 15.5)	
χ^2/Z 值	0.92	-0.21	-1.70	-0.96	-0.24	
P 值	0.358	0.871	0.089	0.338	0.808	
组别	胃旁静脉 例(%)		胃穿支静脉 例(%)		食管穿支静脉 例(%)	
	有	无	有	无	有	无
不良组($n = 39$)	22(56.4)	17(43.6)	23(59.0)	16(41.0)	25(64.1)	14(35.9)
正常组($n = 25$)	7(28.0)	18(72.0)	5(20.0)	20(80.0)	9(36.0)	16(64.0)
χ^2/Z 值	-4.96 [†]		-9.40 [†]		-4.83 [†]	
P 值	0.026		0.002		0.028	

注: [†]为 χ^2 值

表2 影响接受EVL的乙肝肝硬化伴EGV患者治疗效果的多因素分析

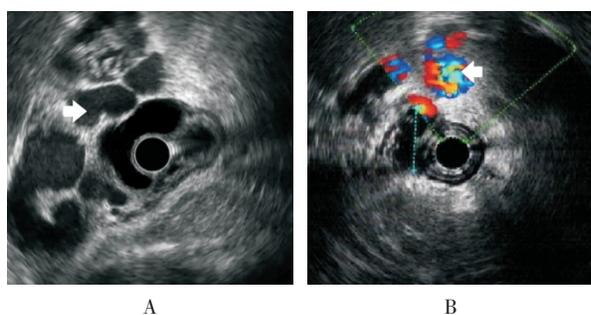
Table 2 Multivariate analysis of influencing factors of effect of hepatitis B cirrhosis patients with EGV who received EVL treatment

类别	B	SE	\hat{OR} 值	95%CI	P值
年龄	0.91	0.24	2.48	1.54 ~ 3.98	0.000
胃旁静脉	0.87	0.24	2.35	1.43 ~ 3.70	0.000
胃穿支静脉	1.27	0.25	3.54	2.20 ~ 5.73	0.000
食管穿支静脉	0.66	0.22	1.94	1.26 ~ 2.98	0.003

2.3 典型病例的EUS表现

2.3.1 典型病例1 患者男,46岁,EGV 2型,静脉曲张沿着胃大弯延伸,超过胃底部结合部。见附图A。

2.3.2 典型病例2 患者男,57岁,胃静脉曲张(不伴食管静脉曲张)。见附图B。



A: 典型病例1; B: 典型病例2

附图 典型病例EUS表现

Attached fig. EUS manifestations of typical cases

3 讨论

应用EVL治疗EGV后,曲张静脉复发率较高,常见原因包括:黏膜内再生血管出现,或原先曲张静脉再通,其发生与穿支静脉或侧支静脉的存在密不可分。通过EVL治疗,只能单纯处理管腔内曲张血管,对于黏膜下静脉尚无有效的治疗措施。目前,还没有可靠指标用以准确预测EVL对EGV患者的治疗效果。ANDRADE CARNEIRO等^[11]报道,EVL治疗前后,食管旁曲张静脉直径是EGV复发的有效预测指标。IRISAWA等^[12]报道,存在严重的食管周围侧支静脉及穿支静脉时,表明EGV复发。本研究结果显示,64例接受EVL治疗的乙肝肝硬化伴EGV患者中,存在胃旁静脉、胃穿支静脉和食管穿支静脉的患者分别为29例(45.3%)、28例(43.8%)和34例(53.1%)。

对于已接受治疗的EGV患者,EUS在评估病例复发方面具有独特优势^[13-15]。本研究表明,年龄是接受EVL的乙肝肝硬化伴EGV患者治疗效果不佳的危险因素。年龄越大,可能反映了肝硬化患者更长的肝硬化病程和更严重的并发症,其临床结局往往不佳。EUS能够清晰地观察胃、食管侧支静脉和穿支静脉,并认定它们是曲张静脉复发的风险因子。KUME等^[16]对接受EVL治疗的患者进行EUS随访,发现存在食管侧支静脉和穿支静脉的病例,更易出现病情反复。李爽等^[17]在EVL术前对EGV病例进行EUS评估,术后随访发现:重度多发食管周围旁静脉是EGV复发的危险因素。本研究发现,胃旁静脉、胃穿支静脉和食管穿支静脉均为影响接受EVL的乙肝肝硬化伴EGV患者治疗效果的独立危险因素。由此可以推论,EGV病例在施行EVL前进行EUS评估,有助于防止术后EGV的复发。

综上所述,胃旁静脉、胃穿支静脉及食管穿支静脉的存在,是接受EVL的乙肝肝硬化伴EGV患者治疗效果不佳的EUS特征,早期甄别,将有助于改善患者预后。

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