

**American College of Radiology  
ACR Appropriateness Criteria®**

**Radiologic Management of Gastric Varices**

**Variant 1: Cirrhotic patient with active bleeding from large high flow gastric varices, significant portal hypertension, and a MELD score of 14. CT demonstrates a large gastroduodenal shunt.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
BRTO	Usually appropriate	Strong	N/A	N/A	8	n/a	0	0	0	0	0	0	0	0	0

References	Study Quality
26 (11287510)	2
47 (11959725)	2
18 (15269027)	2
51 (15788621)	2
52 (21353984)	4
56 (19032446)	1
15 (12845306)	1
16 (28246514)	2
20 (24468043)	2
23 (11029085)	4
24 (11283531)	4
25 (15362757)	4
27 (10228513)	4
28 (16714879)	4
29 (16361051)	1
30 (17635469)	4
31 (8661570)	4

32 (16261433)	4
33 (15802443)	4
34 (22942551)	4
35 (18029851)	4
36 (20594229)	2
37 (10086645)	4
38 (12859723)	4
39 (27234486)	2
40 (12853666)	4
41 (26957907)	2
42 (20737152)	4
43 (26316136)	4
44 (23481167)	2
45 (26295655)	2
46 (23323252)	4
48 (28483304)	4
49 (22733913)	2
50 (28180928)	4
53 (18713295)	4
54 (16804972)	2
55 (18647931)	4
57 (10067311)	4
58 (8911204)	4
59 (9473542)	4
60 (25519690)	Good
62 (14695698)	4
63 (20172743)	4
64 (15688111)	2
65 (24322305)	2
66 (23939627)	2
61 (19470572)	4

TIPS	Usually appropriate	Strong	N/A	N/A	8	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
18 (15269027)	2
11 (26517576)	1
12 (24480619)	1
13 (10534333)	4
14 (9558287)	2
15 (12845306)	1
16 (28246514)	2
17 (17661241)	1
19 (10902977)	4
20 (24468043)	2
21 (27106732)	2
22 (27458505)	1
10 (26614596)	4

Endoscopic management	Usually appropriate	Strong	N/A	N/A	8	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
6 (15057756)	4
2 (27786365)	4
7 (9260698)	2
8 (26469912)	Good
9 (17380280)	3

Partial splenic embolization	May be appropriate	Strong	N/A	N/A	5	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
71 (16534680)	1
55 (18647931)	4
67 (18019732)	3
68 (28494001)	4





		82 (21618687)			4												
Surgical management	May be appropriate	Strong	N/A	N/A	4	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		26 (11287510)			2												
		36 (20594229)			2												
		39 (27234486)			2												
BRTO	Usually not appropriate	Limited	N/A	N/A	3	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		80 (23681780)			2												

**Variant 4: Cirrhotic patient bleeding from large, high flow gastric varices with hepatic encephalopathy and a MELD score of 18. MRI demonstrates a large gastroduodenal shunt.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations										
							1	2	3	4	5	6	7	8	9		
BRTO	Usually appropriate	Strong	N/A	N/A	8	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		26 (11287510)			2												
		60 (25519690)			Good												
		80 (23681780)			2												
Endoscopic management	Usually appropriate	Limited	N/A	N/A	8	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		26 (11287510)			2												
Partial splenic embolization	May be appropriate	Strong	N/A	N/A	5	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		66 (23939627)			2												

		84 (15654779)			2												
TIPS	May be appropriate	Limited	N/A	N/A	4	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		83 (14730033)			4												
Surgical management	May be appropriate	Limited	N/A	N/A	4	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		83 (14730033)			4												

**Variant 5: Cirrhotic patient bleeding from esophageal varices and gastric varices not amenable to endoscopic management with a MELD score of 13 and a hepatic wedge pressure of 22 mmHg. CT demonstrates a small gastrosrenal shunt.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations										
							1	2	3	4	5	6	7	8	9		
TIPS	Usually appropriate	Strong	N/A	N/A	9	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												
		18 (15269027)			2												
		11 (26517576)			1												
		13 (10534333)			4												
		14 (9558287)			2												
		15 (12845306)			1												
		16 (28246514)			2												
		17 (17661241)			1												
		19 (10902977)			4												
		20 (24468043)			2												
Surgical management	May be appropriate	Strong	N/A	N/A	6	n/a	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality												





		References	Study Quality												
		60 (25519690)	Good												
TIPS	Usually appropriate	Limited	N/A	N/A	7	n/a	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		86 (3391371)	2												
Endoscopic management	Usually appropriate	Limited	N/A	N/A	7	n/a	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		9 (17380280)	3												
Partial splenic embolization	May be appropriate	Limited	N/A	N/A	5	n/a	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		67 (18019732)	3												
		68 (28494001)	4												
Surgical management	May be appropriate	Limited	N/A	N/A	5	n/a	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		67 (18019732)	3												
		68 (28494001)	4												
		87 (15127277)	3												

**Variant 7: Patient with gastric variceal bleeding, found to have chronic splenic vein occlusion on MRI.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Surgical management	Usually appropriate	Limited	N/A	N/A	8	8	0	0	1	0	3	0	1	4	2
		References	Study Quality												
		89 (24500452)	4												

			95 (10773149)			4												
			96 (8424698)			2												
Splenic vein recanalization	Usually appropriate	Limited	N/A	N/A	8	8	0	0	0	0	1	1	2	5	2			
		References			Study Quality													
			93 (23636249)			4												
Partial splenic embolization	Usually appropriate	Limited	N/A	N/A	7	7	0	0	0	0	1	2	5	3	0			
		References			Study Quality													
			89 (24500452)			4												
			94 (26304614)			4												
Endoscopic management (sclerosis or cyanoacrylate injection)	May be appropriate	Limited	N/A	N/A	5	5	0	1	1	3	2	3	0	1	0			
		References			Study Quality													
			89 (24500452)			4												
			90 (18498359)			4												
BRTO	Usually not appropriate	Limited	N/A	N/A	3	3	2	2	4	3	0	0	0	0	0			
		References			Study Quality													
			89 (24500452)			4												
			91 (21479742)			4												
			92 (23830671)			4												
TIPS	Usually not appropriate	Expert Consensus	N/A	N/A	3	3	1	2	3	3	1	0	1	0	0			

**Variant 8: Patient with chronic intrahepatic and extrahepatic portal vein occlusion with cavernous transformation on CT with gastric variceal bleeding.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations											
							1	2	3	4	5	6	7	8	9			
Portal vein recanalization plus	Usually	Strong	N/A	N/A	8	8	0	0	0	0	0	1	3	5	2			



92 (23830671)

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## **Appendix Key**

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

**Appropriateness Category:** The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

**SOE:** Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality:** The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

**RRL:** Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

**Rating:** The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Median:** The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Final tabulations:** A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at [www.acr.org/ac](http://www.acr.org/ac).