American College of Radiology
ACR Appropriateness Criteria®

Nonthrombotic Iliac Vein Lesion

Variant 1: Adult. Unilateral lower extremity edema. Suspected nonthrombotic iliac vein lesion. Venous etiology. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations 1	2	3	4	5	6	7	8	9
CTV abdomen and pelvis with IV contrast	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		9	9	0	0	0	0	0	0	3	4	8

References	Study Quality
17 (39400315)	1
30 (37196921)	3
15 (32414674)	4
12 (36124369)	4
24 (26885480)	4
16 (35759778)	4
14 (32197952)	4

MRV abdomen and pelvis with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	1	1	4	5	4

References	Study Quality
13 (37542815)	2
12 (36124369)	4

MRV abdomen and pelvis without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	1	1	3	7	3

References	Study Quality
13 (37542815)	2
12 (36124369)	4

CTV abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		8	8	0	0	0	0	1	1	2	7	4

References	Study Quality
17 (39400315)	1
30 (37196921)	3
15 (32414674)	4
12 (36124369)	4
14 (32197952)	4
16 (35759778)	4

US duplex Doppler lower extremity	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	2	3	6	2	2

References	Study Quality
17 (39400315)	1
30 (37196921)	3
22 (33840321)	3
23 (35926801)	2

MRV abdomen and pelvis without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	3	2	2	8	0	0

References	Study Quality
13 (37542815)	2
12 (36124369)	4

CT abdomen and pelvis with IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	1	2	10	2	1	0	0

References	Study Quality
30 (37196921)	3

CT abdomen and pelvis without and with IV contrast	May be appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	5	5	1	0	2	4	6	2	1	0	0

References	Study Quality
30 (37196921)	3

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	1	0	0	7	6	1	0	1	0

References	Study Quality
13 (37542815)	2
11 (33866382)	3

MRI abdomen and pelvis with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	1	0	1	3	10	0	0	1	0

References	Study Quality
13 (37542815)	2
11 (33866382)	3

CT abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	3	4	5	0	2	1	0	0	0

References	Study Quality
30 (37196921)	3

CTA abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	3	3	2	6	7	1	0	0	0	0	0
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	5	8	0	0	0	0	0	0

References	Study Quality
13 (37542815)	2
11 (33866382)	3

US lower extremity	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	2	6	1	2	4	1	0	0	0

References	Study Quality
17 (39400315)	1
30 (37196921)	3
22 (33840321)	3
23 (35926801)	2

CTA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv		2	2	2	8	6	0	0	0	0	0	0
MRA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	3	12	0	0	0	0	0	1	0
Catheter venography pelvis and lower extremity	Usually not appropriate	Limited	☢☢☢ 1-10 mSv		2	2	5	8	1	1	1	0	0	0	0

References	Study Quality
26 (39138303)	2
34 (36818336)	3
18 (28818221)	3
12 (36124369)	4
24 (26885480)	4
16 (35759778)	4
20 (31196766)	0
11 (33866382)	3
31 (11932665)	3
19 (30926244)	4

US lower extremity with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	3	8	0	4	0	0	1	0	0
US intravascular iliac veins	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	5	10	0	0	0	0	1	0	0

References	Study Quality
17 (39400315)	1
37 (37453549)	3
18 (28818221)	3
22 (33840321)	3
13 (37542815)	2
39 (26993384)	4
15 (32414674)	4
20 (31196766)	0

References	Study Quality
31 (11932665)	3
14 (32197952)	4
2 (26993015)	4
19 (30926244)	4

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography abdomen	Usually not appropriate	Expert Consensus	☢☢ 0.1-1mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	11	0	3	0	1	0	0	0	0

References	Study Quality
27 (22835564)	4

Variant 2: Adult. Asymptomatic. Known left common iliac vein stenosis. Nonthrombotic iliac vein lesion found on US, CT, or MRI. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Catheter venography pelvis and lower extremity	Usually not appropriate	Limited	☢☢☢ 1-10 mSv		2	2	8	4	4	0	0	0	0	0	0

References	Study Quality
34 (36818336)	3
12 (36124369)	4
11 (33866382)	3
31 (11932665)	3
33 (30172665)	4
16 (35759778)	4

CT abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	13	2	0	0	0	1	0	0	0
CT abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	8	0	3	1	1	1	1	0	0
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	1	1	12	3	0	0	1	0	0	0	0

CTA abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	1	1	13	2	0	0	1	0	0	0	0
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	13	2	0	1	0	0	0	0	0

References	Study Quality
13 (37542815)	2
11 (33866382)	3

MRI abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	13	2	1	0	0	0	0	0	0

References	Study Quality
13 (37542815)	2
11 (33866382)	3

US duplex Doppler lower extremity	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	1	1	10	2	4	0	0	0	0	0	0

References	Study Quality
17 (39400315)	1
23 (35926801)	2

Radiography abdomen	Usually not appropriate	Expert Consensus	☢☢ 0.1-1mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	11	0	3	1	0	0	0	0	0

References	Study Quality
27 (22835564)	4

CTA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv		1	1	13	2	0	0	1	0	0	0	0
MRA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	13	2	0	0	0	0	0	1	0
US lower extremity	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	5	0	0	0	0	1	0	0

References	Study Quality

		17 (39400315)		1												
		23 (35926801)		2												
MRI abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	13	2	0	0	0	0	1	0	0
		References		Study Quality												
		13 (37542815)		2												
		11 (33866382)		3												
US lower extremity with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	13	2	0	0	0	0	1	0	0
CTV abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv		1	1	10	5	0	0	1	0	0	0	0
		References		Study Quality												
		17 (39400315)		1												
		12 (36124369)		4												
		15 (32414674)		4												
		16 (35759778)		4												
MRV abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	4	0	0	1	0	0	0	0
		References		Study Quality												
		13 (37542815)		2												
		12 (36124369)		4												
MRV abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	4	0	0	1	0	0	0	0
		References		Study Quality												
		13 (37542815)		2												
		12 (36124369)		4												
US intravascular iliac veins	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	13	2	0	0	0	0	1	0	0
		References		Study Quality												
		17 (39400315)		1												

		13 (37542815)	2												
		15 (32414674)	4												
		31 (11932665)	3												
		2 (26993015)	4												
MRV abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	5	0	0	0	1	0	0	0
		References	Study Quality												
		13 (37542815)	2												
		12 (36124369)	4												
CTV abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv		1	1	11	4	0	0	1	0	0	0	0
		References	Study Quality												
		17 (39400315)	1												
		12 (36124369)	4												
		15 (32414674)	4												
		16 (35759778)	4												

Variant 3: Adult. Pelvic pain. Suspected nonthrombotic iliac vein lesion. Venous etiology. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTV abdomen and pelvis with IV contrast	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		8	8	0	0	0	0	0	0	2	7	6
US pelvis transabdominal	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	1	1	2	1	5	3	2
MRV abdomen and pelvis with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	1	1	6	3	4
MRV abdomen and pelvis without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	1	0	7	4	3

MRV abdomen and pelvis without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	2	2	0	10	0	1
CTV abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		7	7	0	0	0	1	1	1	5	3	4
US duplex Doppler lower extremity	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	1	0	2	4	2	5	0	1

References	Study Quality
36 (39423912)	4
38 (32593634)	4

CT abdomen and pelvis with IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	1	1	1	2	10	0	0	1	0
MRI abdomen and pelvis without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	1	2	0	3	8	2	0	0	0
MRI abdomen and pelvis with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	1	2	0	5	7	1	0	0	0
CT abdomen and pelvis without and with IV contrast	May be appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	4	4	1	1	1	6	7	0	0	0	0
CT abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	4	1	6	0	3	0	0	0	1
CTA abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	2	2	4	7	4	0	0	1	0	0	0
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	5	5	5	0	0	0	1	0	0
CTA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv		2	2	5	6	5	0	0	0	0	0	0

MRA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	4	8	3	0	0	0	1	0	0
US lower extremity	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	3	6	2	4	0	0	0	1	0

References	Study Quality
36 (39423912)	4
38 (32593634)	4

Catheter venography pelvis and lower extremity	Usually not appropriate	Limited	☢☢☢ 1-10 mSv		2	2	3	10	3	0	0	0	0	0	0
US lower extremity with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	7	5	3	0	0	0	1	0	0
US intravascular iliac veins	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	7	6	2	0	0	0	0	1	0

References	Study Quality
36 (39423912)	4
37 (37453549)	3

Radiography abdomen	Usually not appropriate	Expert Consensus	☢☢ 0.1-1mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	11	0	2	0	1	1	0	0	0

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.**