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## Subject: Computed Tomography Angiography (CTA) Abdomen and Pelvis

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### DESCRIPTION:

Computed tomography angiography (CTA) is an imaging procedure performed for characterizing vascular anatomy, diagnosing vascular diseases, planning treatment for vascular disease and assessing the effectiveness of vascular treatment. CTA may be performed with or without contrast material.

Abdomen and pelvis CTA is used in the evaluation of the arteries and veins in the peritoneal cavity (abdominal aorta, iliac arteries). Abdomen CTA is used in the evaluation of the arteries of the abdominal aorta and renal arteries. Pelvis CTA is used in the evaluation of veins and arteries of the pelvis or lower extremities. Abdominal arteries CTA are used in the evaluation of the abdominal aorta and vascular supply to the lower extremities.

**Summary and Analysis of Evidence:** Computed tomography angiography (CTA) is an imaging method of choice for a wide range of vascular diseases that span across different vascular territories. Non-invasive cross-sectional imaging techniques play a crucial role in the assessment of the vascular disease processes (Baliyan et al 2019).

### POSITION STATEMENT:

Computed tomography angiography (CTA) of the abdomen and pelvis, abdominal, pelvis and abdominal arteries **meets the definition of medical necessity** for the following:

#### Abdomen/Pelvis CTA

#### Indications for Abdomen/Pelvic CTA:

## Evaluation of known or suspected abdominal/pelvic vascular disease

### Arterial Disease

- Known large vessel diseases (e.g., abdominal aorta, inferior vena cava, superior/inferior mesenteric, celiac, splenic, renal or iliac arteries/veins) (e.g., aneurysm, dissection, arteriovenous malformations (AVMs), fistulas, intramural hematoma, vasculitis).
- Evidence of vascular abnormality seen on prior imaging studies.
- Suspected aortic dissection.
- Evaluation of known or suspected aortic aneurysm:
  - Known or suspected aneurysm > 2.5 cm **AND** equivocal or indeterminate ultrasound results; **OR**
  - Suspected complications of known aneurysm as evidenced by signs/symptoms, such as new onset of abdominal or pelvic pain.
  - Suspected complications of known aneurysm as evidenced by clinical findings such as new onset of pelvic pain
  - Surveillance imaging every three years for diameter 2.0-2.9 cm and annually for 3.0-3.4 cm. If >3.5 cm , <6 month follow up (and consider intervention)\*\*.
- Lower gastrointestinal hemorrhage: Active bleeding in a hemodynamically stable member or non-localized intermittent bleeding as an alternative to Tc-99m RBC scan when colonoscopy did not localize the bleeding, or is contraindicated or unavailable.
- Evaluation of suspected mesenteric ischemia.
- Fibromuscular dysplasia (FMD).
- Vascular Ehlers-Danlos syndrome or Marfan syndrome.
- Loeys-Dietz syndrome.
- Assessment in members with spontaneous coronary artery dissection (SCAD).
- Vascular invasion or displacement by tumor (if involves both the abdomen and pelvis).

### Venous Disease

- Venous thrombosis if previous studies have not resulted in a clear diagnosis.
- May-Thurner syndrome.
- Evaluation of venous thrombosis in the inferior vena cava (IVC).
- Vascular invasion or displacement by tumor (if involves both the abdomen and pelvis).
- Diffuse unexplained lower extremity edema with negative or inconclusive ultrasound.

### Pre-operative evaluation

- Evaluation of interventional vascular procedures for luminal patency versus restenosis due to conditions (e.g., atherosclerosis, thromboembolism, intimal hyperplasia).
- Prior to repair of abdominal aortic aneurysm (AAA).
- Imaging of the deep inferior epigastric arteries for surgical planning (e.g., breast reconstructive surgery).

## **Post-operative evaluation**

- Evaluation of endovascular/interventional abdominal vascular procedures for luminal patency versus restenosis due to conditions (e.g., atherosclerosis, thromboembolism, intimal hyperplasia).
- Evaluation of post-operative complications (e.g., pseudoaneurysms, related to surgical bypass grafts, vascular stents, stent-grafts in the peritoneal cavity).
- Suspected complications of inferior vena cava (IVC) filters.
- Follow-up for post-endovascular repair (EVAR) or open repair of abdominal aortic aneurysm (AAA) or abdominal extent of iliac artery aneurysms:
  - Routine, baseline study (post-op/intervention) is warranted within 1-3 months.
  - Asymptomatic at six (6) month intervals, for one (1) year, then annually.
  - Symptomatic/complications related to stent graft (more frequent imaging may be needed).

## **Other Vascular Indications**

- For hemodynamically unstable members.
- Suspected retroperitoneal hematoma or hemorrhage to determine vascular source of hemorrhage, in setting of trauma, tumor invasion, fistula or vasculitis.
- Vascular invasion or displacement by tumor.
- For diffuse unexplained lower extremity edema with negative or inconclusive ultrasound.

## **Abdomen CTA**

### **Indications for Abdomen CTA:**

### **Evaluation of known or suspected abdominal vascular disease**

#### **Arterial Disease**

- Known large vessel diseases (celiac, splenic, renal arteries/veins) (e.g., aneurysm, dissection, arteriovenous malformations (AVMs), fistulas, intramural hematoma, vasculitis limited to the abdomen).
- Evidence of vascular abnormality seen on prior imaging studies and limited to the abdomen.
- Suspected aortic dissection.
- Diagnosis or follow-up of visceral artery aneurysm.
- Evaluation of known or suspected aortic aneurysm.
- Suspected retroperitoneal hematoma or hemorrhage (to determine vascular source of hemorrhage in setting of trauma, tumor invasion, fistula or vasculitis; otherwise CT is sufficient and the modality of choice for diagnosing hemorrhage).
- Evaluation of suspected mesenteric ischemia/ischemic colitis.
- Fibromuscular dysplasia (FMD).
- Vascular Ehlers-Danlos syndrome or Marfan syndrome.
- Loeys-Dietz syndrome.
- Assessment in members with spontaneous coronary artery dissection (SCAD).

- Evaluation of hepatic blood vessel abnormalities (aneurysm, hepatic vein thrombosis, stenosis post-transplant) after doppler ultrasound has been performed; to clarify or further evaluate ultrasound findings.
- Vascular invasion or displacement by tumor in abdomen.
- Evaluation of known or suspected renal artery stenosis or resistant hypertension in the setting of normal renal function (with impaired renal function, eGFR <30, use US with Doppler) unrelated to recent medication demonstrated by any of the following:
  - Unsuccessful control after treatment with three (3) or more (> 2) anti-hypertensive medications at optimal dosing and one should be a diuretic.
  - Acute elevation of creatinine after initiation of an angiotensin-converting-enzyme inhibitor (ACE inhibitor) or angiotensin receptor blockers (ARB).
  - Asymmetric kidney size noted on ultrasound.
  - Onset of hypertension in a member younger than age 30 without any other risk factors or family history of hypertension.
  - Significant hypertension (diastolic blood pressure > 110 mm Hg) in a young adult (i.e., younger than 35 years) suggestive of fibromuscular dysplasia.
  - Diagnosis of a syndrome with a higher risk of vascular disease, such as neurofibromatosis, tuberous sclerosis and Williams' syndrome.
  - New onset of hypertension after age 50.
  - Acute rise in blood pressure in a member with previously stable blood pressure.
  - Flash pulmonary edema without identifiable causes.
  - Malignant or accelerated hypertension.
  - Bruit heard over renal artery and hypertension.
  - Abnormal/inconclusive renal doppler ultrasound.

### **Venous Disease**

- Suspected renal vein thrombosis in member with known renal mass or from other causes.
- Venous thrombosis if previous studies have not resulted in a clear diagnosis.
- For May-Thurner syndrome.
- Vascular invasion or displacement by tumor in the abdomen.
- For evaluation of portal venous system (hepatic portal system) after doppler ultrasound has been performed.
- For diffuse unexplained lower extremity edema with negative or inconclusive ultrasound.

### **Pre-operative evaluation**

- Evaluation of transjugular intrahepatic portosystemic shunt (TIPS) when Doppler ultrasound indicates suspected complications.
- Evaluation prior to interventional vascular procedures for luminal patency versus restenosis due to conditions (e.g., atherosclerosis, thromboembolism, intimal hyperplasia).
- Pre-transplant evaluation of either liver or kidney.
- Imaging of the deep inferior epigastric arteries for surgical planning (breast reconstruction surgery),

include pelvic MRA.

### **Post-operative or post-procedure evaluation**

- Evaluation of endovascular/interventional vascular procedures for luminal patency versus restenosis due to conditions (e.g., atherosclerosis, thromboembolism, intimal hyperplasia).
- Evaluation of post-operative complications (e.g., pseudoaneurysms, related to surgical bypass grafts, vascular stents, stent-grafts in peritoneal cavity).
- Follow-up for post-endovascular aortic repair (EVAR) or open repair of abdominal aortic aneurysm (AAA) or abdominal extent of iliac artery aneurysms. Routine, baseline study (post-op/intervention) is warranted within 1-3 months:
  - Asymptomatic at six (6) month intervals for one (1) year, then annually
  - Symptomatic/complications related to stent graft- more frequent imaging may be needed.

### **Other Vascular indications**

- Suspected retroperitoneal hematoma or hemorrhage to determine vascular source of hemorrhage, in setting of trauma, tumor invasion, fistula or vasculitis
- For evaluation of hepatic blood vessel abnormalities (aneurysm, hepatic vein thrombosis, stenosis post-transplant) after doppler ultrasound has been performed; to clarify or further evaluate ultrasound findings
- Lower gastrointestinal hemorrhage: Active bleeding in a hemodynamically stable member or nonlocalized intermittent bleeding as an alternative to Tc-99m RBC scan when colonoscopy did not localize the bleeding, is contraindicated, or unavailable.

### **Pelvis CTA**

#### **Indications for Pelvic CTA:**

#### **Evaluation of known or suspected vascular disease**

- Pelvic extent of known large vessel diseases (abdominal aorta, inferior vena cava, superior/inferior mesenteric, celiac, splenic, renal or iliac arteries/veins) (e.g., aneurysm, dissection, arteriovenous malformations (AVMs), fistulas, intramural hematoma, vasculitis).
- Evidence of vascular abnormality seen on prior imaging studies.
- Suspected pelvic extent or aortic dissection.
- Venous thrombosis if previous studies have not resulted in a clear diagnosis.
- Vascular invasion or displacement by tumor.
- Evaluation of known or suspected aneurysms limited to the pelvis or in evaluating pelvic extent of aortic aneurysm.
- Follow up of iliac artery aneurysm: Every three years for diameter 2.0 – 2.9 cm; annually for 3.0- 3.4 cm if Doppler ultrasound is inconclusive; or if > 3.5 cm, < six month follow-up.
- Suspected retroperitoneal hematoma or hemorrhage to determine vascular source of hemorrhage, in setting of trauma, tumor invasion, fistula or vasculitis, otherwise CT/MR abdomen and pelvis (rather than CTA/MRA) may be sufficient.

- Evaluation of suspected pelvic vascular disease or pelvic congestive syndrome when findings on ultrasound are indeterminate (MR or CT venography may be used as the initial study for pelvic thrombosis or thrombophlebitis).
- Evaluation of venous thrombosis in the inferior vena cava.
- Evaluation of suspected mesenteric ischemia/ischemic colitis.
- Suspected May-Thurner Syndrome (iliac vein compression syndrome).
- Lower gastrointestinal hemorrhage: Active bleeding in a hemodynamically stable member or non-localized intermittent bleeding as an alternative to Tc-99m RBC scan when colonoscopy did not localize the bleeding, is contraindicated or unavailable.
- Evaluation of erectile dysfunction when a vascular cause is suspected and Doppler ultrasound is inconclusive.
- Fibromuscular dysplasia (FMD).
- Vascular Ehlers-Danlos syndrome or Marfan syndrome.
- Loeys-Dietz syndrome.
- Spontaneous coronary artery dissection (SCAT).

#### **Pre-operative evaluation**

- Evaluation of interventional vascular procedures prior to endovascular aneurysm repair (EVAR), or for luminal patency versus restenosis due to conditions (e.g., atherosclerosis, thromboembolism, intimal hyperplasia).
- Imaging of the deep inferior epigastric arteries for surgical planning (breast reconstruction surgery)
- Prior to uterine artery embolization for fibroids.

#### **Post-operative or post-procedural evaluation**

- Evaluation of post-operative complications of renal transplant allograft.
- Evaluation of endovascular/interventional vascular procedures for luminal patency versus restenosis due to conditions (e.g., atherosclerosis, thromboembolism, intimal hyperplasia).
- Evaluation of post-operative complications (e.g. pseudoaneurysms, related to surgical bypass grafts, vascular stents, stent-grafts in the pelvis).
- Follow-up for post-endovascular repair (EVAR) or open repair of abdominal aortic aneurysm (AAA) and iliac artery aneurysms:
  - Routine baseline study (post-operative/intervention) is warranted within 1-3 months
  - Asymptomatic at six (6) month intervals, for one (1) year, then annually.
  - Symptomatic/complications related to stent graft (more frequent imaging may be needed).

#### **Abdominal Arteries CTA**

##### **Indications for Abdominal Arteries CTA:**

Evaluation of a vascular abnormality in the abdominal aorta and lower extremities

### Evaluation of known or suspected abdominal, pelvic or peripheral vascular disease

- Known or suspected peripheral arterial disease (such as claudication, or clinical concern for vascular causes of ulcers) when non-invasive studies are abnormal or equivocal.
- Critical limb ischemia with **ANY** of the following clinical signs of peripheral artery disease:
  - Ischemic rest pain
  - Tissue loss
  - Gangrene.

### Pre-operative evaluation

- Evaluation of interventional vascular procedures for luminal patency versus restenosis due to conditions (e.g., atherosclerosis, thromboembolism, intimal hyperplasia).

### Post-operative or post-procedural evaluation

- Evaluation of post-operative complications (e.g., pseudoaneurysms, related to surgical bypass grafts, vascular stents, stent grafts).
- Follow-up study may be needed to help evaluate a member's progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested.
- After stenting or surgery with signs of recurrent symptoms **OR** abnormal ankle/brachial index; abnormal or indeterminate arterial doppler; OR pulse volume recording.

## BILLING/CODING INFORMATION:

### CPT Coding:

72191	Computed tomographic angiography, pelvis, with contrast material(s), including noncontrast images, if performed, and image postprocessing
74174	Computed tomographic angiography, abdomen and pelvis, with contrast material(s), including noncontrast images, if performed, and image postprocessing
74175	Computed tomographic angiography, abdomen, with contrast material(s), including noncontrast images, if performed, and image postprocessing
75635	Computed tomographic angiography, abdominal aorta and bilateral iliofemoral lower extremity runoff, with contrast material(s), including noncontrast images, if performed, and image postprocessing

## REIMBURSEMENT INFORMATION:

Refer to section entitled [POSITION STATEMENT](#).

Re-imaging or additional imaging due to poor contrast enhanced exam or technically limited exam is the responsibility of the imaging provider.

## LOINC Codes:

The following information may be required documentation to support medical necessity: physician history and physical, physician progress notes, plan of treatment and reason for computed tomography angiography (CTA) of the (abdomen and pelvis, abdomen, pelvis, and abdominal arteries).

<b>Documentation Table</b>	<b>LOINC Codes</b>	<b>LOINC Time Frame Modifier Code</b>	<b>LOINC Time Frame Modifier Codes Narrative</b>
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Attending physician progress note	18741-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology reason for study	18785-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study-date and time	18779-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study observation	18834-2	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-study observation	18782-3	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-impression	19005-8	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology study-recommendation (narrative)	18783-1	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim



## PROGRAM EXCEPTIONS:

**Federal Employee Plan (FEP):** Follow FEP guidelines.

**Medicare Advantage products:** No Local Coverage Determination (LCD) were found. The following National Coverage Determination (NCD) was reviewed on the last guideline reviewed date: Computed Tomography (220.1), located at cms.gov.

## DEFINITIONS:

No guideline specific definitions apply.

## RELATED GUIDELINES:

[Computed Tomography Angiography \(CTA\) Brain \(Head\), 04-70450-05](#)

[Computed Tomography Angiography \(CTA\) Neck, 04-70450-06](#)

[Computed Tomography Angiography \(CTA\) Chest \(non coronary\), 04-70450-07](#)

[Computed Tomography Angiography \(CTA\) Upper Extremity, 04-70450-08](#)

[Computed Tomography Angiography \(CTA\) Lower Extremity, 04-70450-09](#)

## OTHER:

None applicable.

## REFERENCES:

1. ACR-NASCI-SIR-SPR Practice Parameter for the Performance and Interpretation of Body Computed Tomography Angiography (CTA), Revised 2021.
2. American College of Radiology (ACR) Appropriateness Criteria® Abdominal Aortic Aneurysm: Interventional Planning and Follow-up, Revised 2017.
3. American College of Radiology ACR Appropriateness Criteria®: Imaging of Mesenteric Ischemia, Revised 2018.
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14. Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC / AHA / AAPA / ABC / ACPM / AGS / Apha / ASH / ASPC / NMA / PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Hypertension*. 2018; 71(6):e13-e115.

**COMMITTEE APPROVAL:**

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 02/22/24.

**GUIDELINE UPDATE INFORMATION:**

11/15/13	New Medical Coverage Guideline.
01/01/14	Review. Revised and added abdomen/pelvis, abdomen, pelvis and abdominal arteries indications.
05/15/15	Annual review; revised position statement. Updated references.
06/15/15	Updated related guidelines.
04/15/18	Revision; revised position statement. Updated references.
08/15/20	Review/revision. Revised and expanded criteria for CTA (abdomen/pelvis, abdomen and pelvis).
05/15/22	Review: Position statements and references updated.
07/01/22	Revision to Program Exceptions section.
09/30/23	Review: position statements and references updated.
03/15/24	Review; no change in position statement. Updated program exceptions and references.