

MRA (Magnetic Resonance Angiogram) Abdomen

CPT: 74185

1 Major Symptom or Complaint presented as primary indication

1.1 Abdominal pain after meals

1.1.1 Acute Mesenteric Ischemia suspected

1.1.1.1.1 Cardiac dysfunction

1.1.1.1.2 Vascular disease

1.1.1.1.3 Recent vascular surgery or intervention (including catheter arteriography)

1.1.1.1.4 Advanced age (>60)

1.1.2 Abdominal angina suspected

1.1.2.1 Pain occurs 15 to 60 minutes after eating, lasting for several hours

1.1.2.2 May be associated with constipation, flatulence, diarrhea with or without some blood admixture, nausea and vomiting

References:

1. Elliot K. Fishman; From the RSNA Refresher Courses: CT Angiography: Clinical Applications in the Abdomen; RadioGraphics 2001 21: 3S-16S
2. Odenburg WA, Lau LL, Rodenberg TJ, Edmonds HJ, Burger CD. Acute mesenteric ischemia: a clinical review. Arch Intern Med 2004; 164:1054 -1062
3. Park WM, Gloviczki P, Cherry KJ, Hallett JW, Bower TC, Panneton JM, Schleck C, Ilstrup D, Harmsen WS, Noel AA (2002).Contemporary management of acute mesenteric ischemia: Factors associated with survival. J. Vasc. Surg. 35 (3): 445-52.
4. Harkin Denis W, Lindsay Thomas F, "Chapter 86. Mesenteric Ischemia" (Chapter). Hall JB, Schmidt GA, Wood LDH: Principles of Critical Care, 3e: <http://www.accessmedicine.com/content.aspx?aID=296692>. accessed 10/20/10
5. Filippo Cademartiri, Rolf H. J. M. Raaijmakers, Jan W. Kuiper, Lukas C. van Dijk, Peter M. T. Pattynama, and Gabriel P. Krestin Multi-Detector Row CT Angiography in Patients with Abdominal Angina Radiographics July 2004 24:969-984; doi:10.1148/rg.244035166
6. Shih, Ming-Chen Paul, Hagspiel, Klaus D. CTA and MRA in Mesenteric Ischemia: Part 1, Role in Diagnosis and Differential Diagnosis Am. J. Roentgenol. 2007 188: 452-46
7. Shih, Ming-Chen Paul, Angle, John F., Leung, Daniel A., Cherry, Kenneth J., Harthun, Nancy L., Matsumoto, Alan H., Hagspiel, Klaus D. CTA and MRA in Mesenteric Ischemia: Part 2, Normal Findings and Complications After Surgical and Endovascular Treatment Am. J. Roentgenol. 2007 188: 462-471

1.2 Claudication

1.3 Erectile dysfunction

2 Working Diagnosis or Rule Out presented as primary indication

2.1 Aortic Aneurysm Suspected

2.1.1 Abdominal and back pain

2.1.2 Dilation seen or suspected on prior imaging

2.1.3 Pulsatile abdominal mass

References:

1. Jonathan Golledge, Juanita Muller, Alan Daugherty, and Paul Norman Abdominal Aortic Aneurysm: Pathogenesis and Implications for Management *Arterioscler. Thromb. Vasc. Biol.*, Dec 2006; 26: 2605 – 2613.
2. Miriam B. Rodin, Martha L. Daviglus, Gordon C. Wong, Kiang Liu, Daniel B. Garside, Philip Greenland, and Jeremiah Stamler Middle Age Cardiovascular Risk Factors and Abdominal Aortic Aneurysm in Older Age Hypertension, Jul 2003; 42: 61 – 68.
3. Stephen A. Badger, Mark E. O'Donnell, Muhammed A. Sharif, Christopher S. Boyd, Raymond J. Hannon, Louis L. Lau, Bernard Lee, and Chee V. Soong Risk Factors for Abdominal Aortic Aneurysm and the Influence of Social Deprivation *Angiology*, Oct 2008; 59: 559 – 566.
4. Martin R. Back Surveillance After Endovascular Abdominal Aortic Aneurysm Repair Perspectives in Vascular Surgery and Endovascular Therapy, Dec 2007; 19: 395 – 400.
5. C.A. Spencer, K. Jamrozik, P.E. Norman, and M.M.D. Lawrence-Brown The potential for a selective screening strategy for abdominal aortic aneurysm *J Med Screen*, Dec 2000; 7: 209 – 211.
6. Debbie Davis and Marveen Craig Unsuspected Abdominal Aortic Aneurysm *Journal of Diagnostic Medical Sonography*, May 2002; 18: 154 – 157.
7. Jack L. Cronenwett A Myth Exposed: Fast Growth in Diameter Does Not Justify Precocious Abdominal Aortic Aneurysm Repair Perspectives in Vascular Surgery and Endovascular Therapy, Mar 2004; 16: 79 – 80.
8. Salah D. Qanadli, Benoît Mesurolle, Marc Coggia, Olivier Barré, Sumio Fukui, Olivier A. Goeau-Brissonnière, Sophie Chagnon, and Pascal Lacombe Abdominal Aortic Aneurysm: Pretherapy Assessment with Dual-Slice Helical CT Angiography *Am. J. Roentgenol.*, Jan 2000; 174: 181 – 187.

2.2 Dissection of the aorta, suspected

2.2.1 Back or abdominal pain

2.2.1.1 Abnormal appearance of aorta

2.2.1.2 Acute “ripping, tearing, searing” chest, back or abdominal pain

2.2.1.3 Prior aortic repair

2.2.1.4 Shock

2.2.1.5 syncope

2.2.1.6 Unequal blood pressure in the arms

References

1. Prince Louise A, Johnson Gary A, “Chapter 58. Aortic Dissection and Aneurysms” (Chapter). Tintinalli JE, Kelen GD, Stapczynski JS, Ma OJ, Cline DM: Tintinalli’s Emergency Medicine: A Comprehensive Study Guide, 6th Edition: <http://www.accessmedicine.com/content.aspx?aID=590936>.

2.3 Fibromuscular dysplasia

2.3.1 Hypertension, suspected renovascular cause ONE

2.3.1.1 Accelerated or malignant hypertension

2.3.1.2 Epigastric bruit

2.3.1.4 Impairment of renal function after treatment with an ACE* inhibitor

2.3.1.5 Progressive renal failure (rising creatinine, decreased GFR)

2.3.1.6 Recurrent pulmonary edema

2.3.1.7 Severe hypertension in a child or young adult

2.3.1.8 Sudden development or worsening of hypertension at any age

2.3.1.9 Unilateral small kidney discovered with any clinical study

References:

1. Vesna D. Garovic, and Stephen C. Textor; Renovascular Hypertension and Ischemic Nephropathy; Circulation 112: 1362-1374
2. Postma CT, Joosten FB, Rosenbusch G, Thien T. Magnetic resonance angiography has a high reliability in the detection of renal artery stenosis. Am J Hypertens. 1997; 10: 957-963
3. Vasbinder GBC, Nelemans PJ, Kessels AGH, Kroon AA, Maki JH, Leiner T, Beek FJA, Korst MBJM, Flobbe K, de Haan MW, van Zwam WH, Postma CT, Hunink M, de Leeuw PW, van Engelshoven JMA. Accuracy of computed tomographic angiography and magnetic resonance angiography for diagnosing renal artery stenosis. Ann Intern Med. 2004; 141: 674-682

2.4 Hypertension, suspected renovascular cause [Renal Stenosis] ONE

- 2.4.1 Accelerated or malignant hypertension
- 2.4.3 Failure to respond to at least 3 medications
- 2.4.4 Impairment of renal function after treatment with an ACE* inhibitor
- 2.4.5 Progressive renal failure (rising creatinine, decreased GFR)
- 2.4.6 Recurrent pulmonary edema
- 2.4.7 Severe hypertension in a child or young adult
- 2.4.8 Sudden development or worsening of hypertension at any age
- 2.4.9 Unilateral small kidney discovered with any clinical study

References

1. Vesna D. Garovic, and Stephen C. Textor; Renovascular Hypertension and Ischemic Nephropathy; Circulation 112: 1362-1374
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2.5 Intestinal Angina

2.5.1 Pain occurs 15 to 60 minutes after eating, lasting for several hours

2.5.2 May be associated with constipation, flatulence, diarrhea with or without some blood admixture, nausea and vomiting

References:

1. Elliot K. Fishman; From the RSNA Refresher Courses: CT Angiography: Clinical Applications in the Abdomen; RadioGraphics 2001 21: 3S-16S.
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2.6 Ischemic bowel suspected

2.6.1 Abdominal pain after meals

2.6.1.1 Nausea, vomiting or diarrhea

2.6.1.2 History of

2.6.1.2.1 Cardiac dysfunction

2.6.1.2.2 Vascular disease

2.6.1.2.3 Recent vascular surgery or intervention (including catheter arteriography)

2.6.1.2.4 Advanced age (>60)

References

1. Elliot K. Fishman; From the RSNA Refresher Courses: CT Angiography: Clinical Applications in the Abdomen; RadioGraphics 2001 21: 3S-16S.
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2.7 Thrombosis (clot) suspected in Vena Cava, or other abdominal veins

3 Abnormal Physical Exam Finding presented as primary indication

3.1 Diminished femoral pulses

4 Abnormal Lab or Imaging presented as primary indication

4.1 Aneurysm, known from prior exams

4.1.1 Interval follow up if Ultrasound is inadequate

4.1.2 Preoperative

References

1. Elliot K. Fishman; From the RSNA Refresher Courses: CT Angiography: Clinical Applications in the Abdomen; RadioGraphics 2001 21: 3S-16S
2. Recommendation of the Society of Interventional Radiologists <http://www.scvir.org/patients/abdominal-aortic-aneurysms/> accessed 11/05/09

5 Significant Prior Medical History presented as primary indication

5.1 Aneurysm, known from prior exams

5.1.1 Interval follow up if Ultrasound is inadequate

5.1.2 Preoperative

References

1. Elliot K. Fishman; From the RSNA Refresher Courses: CT Angiography: Clinical Applications in the Abdomen; RadioGraphics 2001 21: 3S-16S
2. Recommendation of the Society of Interventional Radiologists <http://www.scvir.org/patients/abdominal-aortic-aneurysms/> accessed 11/05/09

5.2 Carcinoma of pancreas

5.2.1 For vascular mapping

References:

1. Elliot K. Fishman; From the RSNA Refresher Courses: CT Angiography: Clinical Applications in the Abdomen; RadioGraphics 2001 21: 3S-16S.

5.3 Hepatic Transplant

5.3.1 Preoperative and interval follow up

5.3.1.1 Send for physician review for intervals less than six months.

5.4 Hepatic tumor

5.4.1 Preoperative and interval follow

5.4.1.1 Send for physician review for intervals less than six months

5.5 Kidney Transplant

5.5.1 Preoperative and interval follow up

5.5.1.1 Send for physician review for intervals less than six months.

5.6 Kidney tumor

5.6.1 Preoperative and interval follow up

5.6.1.1 Send for physician review for intervals less than six months.

5.7 Liver Transplant

5.7.1 Preoperative and interval follow up

5.7.1.1 Send for physician review for intervals less than six months.

5.8 Liver tumor

5.8.1 Preoperative and interval follow up

5.8.1.1 Send for physician review for intervals less than six months.

5.9 Renal Transplant

5.9.1 Preoperative and interval follow up

5.9.1.1 Send for physician review for intervals less than six months.

5.10 Renal tumor

5.10.1 Preoperative and interval follow up

5.10.1.1 Send for physician review for intervals less than six months.