Left Lower Quadrant Pain
EVIDENCE TABLE

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
1. Ajaj W, Ruehm SG, Lauenstein T, et al. Dark-lumen magnetic resonance colonography in patients with suspected sigmoid diverticulitis: a feasibility study. *Eur Radiol* 2005; 15(11):2316-2322.	9	40	A prospective study to assess dark-lumen magnetic resonance colonography (MRC) for the evaluation of patients with suspected sigmoid diverticulitis, by comparing the results to conventional colonoscopy (CC).	CC confirmed the presence of light inflammatory signs in 4 patients which were missed in MRC. MRC correctly identified wall thickness and contrast uptake of the sigmoid colon in the patients with diverticulitis. In 3 of these patients false-positive findings were observed, and MRC classified the inflammation of the sigmoid colon as diverticulitis whereas CC and histopathology confirmed invasive carcinoma. MRC detected additionally relevant pathologies of the entire colon and could be performed in cases where CC was incomplete. MRC may be considered a promising alternative to CC for the detection of sigmoid diverticulitis.	3
2. Buckley O, Geoghegan T, McAuley G, Persaud T, Khosa F, Torreggiani WC. Pictorial review: magnetic resonance imaging of colonic diverticulitis. *Eur Radiol* 2007; 17(1):221-227.	12	N/A	To illustrate the emerging role of MRI in the diagnosis and evaluation of colonic diverticulitis.	MRI has a major advantage over CT in that there is no ionizing radiation. In one institution, MRI has increasingly been used as a complimentary imaging modality to CT in the diagnosis and evaluation of diverticulitis and its complications.	4
3. Heverhagen JT, Zielke A, Ishaque N, Bohrer T, El-Sheik M, Klose KJ. Acute colonic diverticulitis: visualization in magnetic resonance imaging. *Magn Reson Imaging* 2001; 19(10):1275-1277.	10	20	Prospective observational study to determine sensitivity of MRI for diverticulitis.	MRI had a sensitivity of 95% for detection of diverticulitis. MRI has considerable diagnostic potential in ACD and should be formally evaluated.	3
4. Schreyer AG, Furst A, Agha A, et al. Magnetic resonance imaging based colonography for diagnosis and assessment of diverticulosis and diverticulitis. *Int J Colorectal Dis* 2004; 19(5):474-480.	9	14 patients 56 segments	A prospective study to assess the feasibility of MRI-based colonography to assess diverticulosis or diverticulitis by comparing results with that of abdominal CT.	MRI colonography revealed the same diagnosis as CT in all patients without ionizing radiation. Additionally, 3D-rendered models and virtual colonoscopy can be performed. This comprehensive 3D model could replace pre-surgical planning barium enema (BE) with concurrent assessment of the residual colon.	2
5. Balthazar EJ, Megibow A, Schinella RA, Gordon R. Limitations in the CT diagnosis of acute diverticulitis: comparison of CT, contrast enema, and pathologic findings in 16 patients. *AJR* 1990; 154(2):281-285.	9	16	Comparative study of CT appearances with contrast enema (13) and surgical assessment and pathologic evaluation of resected specimens (12) to assess cases of diverticulitis with equivocal CT features leading to false positive exam.	Contrast enema useful in 10/13 equivocal CT cases. CT equivocal in 10% of patients: cannot always rule out carcinoma.	3

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6. Cho KC, Morehouse HT, Alterman DD, Thornhill BA. Sigmoid diverticulitis: diagnostic role of CT--comparison with barium enema studies. *Radiology* 1990; 176(1):111-115.	9	56	Prospectively assess accuracy of CT and BE for diverticulitis.	Sensitivity of BE 80%. Sensitivity of CT 93%. No false positives. Recommend CT as initial exam.	2
7. Hulnick DH, Megibow AJ, Balthazar EJ, Naidich DP, Bosniak MA. Computed tomography in the evaluation of diverticulitis. *Radiology* 1984; 152(2):491-495.	9	43	Assess sensitivity of CT vs contrast enema for diverticulitis.	Sensitivity of CT 98%, Sensitivity of enema 59%. Recommend CT as initial exam.	3
8. Johnson CD, Baker ME, Rice RP, Silverman P, Thompson WM. Diagnosis of acute colonic diverticulitis: comparison of barium enema and CT. *AJR* 1987; 148(3):541-546.	9	102	Retrospective review to assess sensitivity of CT vs contrast enema for diverticulitis.	Sensitivity of BE 77%. Sensitivity of CT 79%. No complications of BE. CT altered management in only 1 patient.	2
9. Shrier D, Skucas J, Weiss S. Diverticulitis: an evaluation by computed tomography and contrast enema. *Am J Gastroenterol* 1991; 86(10):1466-1471.	9	228	Assess sensitivity of BE and CT for diagnosis of diverticulitis.	Surgical group: • Sensitivity of BE 90%; • Sensitivity of CT 69%. • BE influenced diagnosis in 5 patient's vs 1 patient for CT. Medical Group: • Sensitivity of BE 32%; • Sensitivity of CT - 62%.	2
10. Kircher MF, Rhea JT, Kihiczak D, Novelline RA. Frequency, sensitivity, and specificity of individual signs of diverticulitis on thin-section helical CT with colonic contrast material: experience with 312 cases. *AJR* 2002; 178(6):1313-1318.	10	312	To determine sensitivity and specificity of helical CT for diverticulitis.	CT had a sensitivity of 99%, a specificity of 99%, and an overall accuracy of 99% for detection of diverticulitis.	2
11. Hachigian MP, Honickman S, Eisenstat TE, Rubin RJ, Salvati EP. Computed tomography in the initial management of acute left-sided diverticulitis. *Dis Colon Rectum* 1992; 35(12):1123-1129.	10	59	Prospective study to assess sensitivity of CT for diagnosis of diverticulitis.	Sensitivity of CT 76%. Diagnosis of extracolonic disease in 3 patients. 4 patients with abscess on CT had percutaneous drainage and one-stage operation. CT is useful in the initial management of patients with acute diverticulitis.	3

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12. Kaiser AM, Jiang JK, Lake JP, et al. The management of complicated diverticulitis and the role of computed tomography. *Am J Gastroenterol* 2005; 100(4):910-917.	13	511	To define the role of CT and to analyze its impact on the management of acute diverticulitis, by retrospectively reviewing the treatment of 511 patients.	CT evidence of a diverticular abscess has a prognostic impact as it correlates with a high risk of failure from nonoperative management regardless of the patient's age. After treatment of diverticulitis with CT evidence of an abscess, physicians should strongly consider elective surgery in order to prevent recurrent diverticulitis.	2
13. Lohrmann C, Ghanem N, Pache G, Makowiec F, Kotter E, Langer M. CT in acute perforated sigmoid diverticulitis. *Eur J Radiol* 2005; 56(1):78-83.	9	30	To prospectively assess the value of CT in patients with acute perforated sigmoid diverticulitis in correlation with the Hinchey classification of perforated diverticular disease. CT scans were compared with the surgical and histopathological reports.	In 28/30 (93%) patients examined, the Hinchey stage was correctly determined by means of CT. CT is a valuable imaging tool for determining the degree of acute perforated sigmoid diverticulitis, by means of which patients can be stratified according to the severity of the disease; furthermore, this tool is of assistance in surgical planning.	1
14. Mueller PR, Saini S, Wittenburg J, et al. Sigmoid diverticular abscesses: percutaneous drainage as an adjunct to surgical resection in 24 cases. *Radiology* 1987; 164(2):321-325.	10	24	To assess effectiveness of percutaneous catheter drainage as adjunct to surgery in patients with diverticulitis and fluid collections.	14/24 patients underwent single-stage operation less than 10 days from drainage. 5 patients required 2-stage operation.	3
15. Siewert B, Tye G, Kruskal J, et al. Impact of CT-guided drainage in the treatment of diverticular abscesses: size matters. *AJR* 2006; 186(3):680-686.	13	30	A retrospective study to determine whether abscess size, measured by CT, can be used as a discriminating factor to guide management of patients with diverticular abscesses.	Measurement of abscess size by CT can determine different management strategies. Patient's with abscesses smaller than 3 cm in size can be treated with antibiotics alone and, in some cases, as outpatients, and may not uniformly require surgery. This is also likely true for patients with abscesses 3-4 cm in size, although our results in this group were limited by a small sample size. Patients with abscesses ≥4 cm can be managed with CT-guided abscess drainage followed by referral for surgical treatment.	3
16. Rao PM, Rhea JT, Novelline RA, et al. Helical CT with only colonic contrast material for diagnosing diverticulitis: prospective evaluation of 150 patients. *AJR* 1998; 170(6):1445-1449.	10	150	Prospective study to determine sensitivity, specificity, and predictive value of CT for diverticulitis.	CT had a sensitivity of 97%, a specificity of 100%, a PPV of 100%, a NPV of 98%, and an overall accuracy of 99% for detection of diverticulitis.	2

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Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
17. Pradel JA, Adell JF, Taourel P, Djafari M, Monnin-Delhom E, Bruel JM. Acute colonic diverticulitis: prospective comparative evaluation with US and CT. *Radiology* 1997; 205(2):503-512.	9	64	Prospective study to compare accuracy of US and CT for diagnosing diverticulitis.	CT and US both had overall accuracy of 84%.	2
18. Schwerk WB, Schwarz S, Rothmund M. Sonography in acute colonic diverticulitis. A prospective study. *Dis Colon Rectum* 1992; 35(11):1077-1084.	10	130	Prospective study to assess accuracy of sonography for diagnosis of diverticulitis.	Accuracy 97.7%, sensitivity 98.1%, specificity 97.5%.	2
19. Yacoe ME, Jeffrey RB, Jr. Sonography of appendicitis and diverticulitis. *Radiol Clin North Am* 1994; 32(5):899-912.	12	NA	Overview of sonography for diverticulitis.	Sensitivity 85%-90%, specificity 80%-98%. Advocate CT or BE for diagnosis of diverticulitis but sonography if diagnosis is confusing.	4
20. Hollerweger A, Macheiner P, Rettenbacher T, Brunner W, Gritzmann N. Colonic diverticulitis: diagnostic value and appearance of inflamed diverticula-sonographic evaluation. *Eur Radiol* 2001; 11(10):1956-1963.	10	175	To determine sensitivity and specificity of sonography for diverticulitis.	Sonography had a sensitivity of 77% and a specificity of 99% for detection of diverticulitis.	2
21. Hollerweger A, Rettenbacher T, Macheiner P, Brunner W, Gritzmann N. Sigmoid diverticulitis: value of transrectal sonography in addition to transabdominal sonography. *AJR* 2000; 175(4):1155-1160.	9	86	To determine how often transrectal sonography improves detection of diverticulitis when performed in addition to transabdominal sonography.	Transrectal sonography provides additional information in 59% of patients with diverticulitis and allowed diagnosis in 18% in whom the diagnosis was missed on transabdominal sonography.	3
22. Chintapalli KN, Chopra S, Ghiatas AA, Esola CC, Fields SF, Dodd GD, 3rd. Diverticulitis versus colon cancer: differentiation with helical CT findings. *Radiology* 1999; 210(2):429-435.	10	58 72 scans	To retrospectively determine the CT signs associated with diverticulitis or colon cancer and to prospectively apply these signs in the differentiation of these diseases.	No pericolonic lymph nodes adjacent to a segment of colonic wall thickening, with pericolonic inflammatory changes diagnosis is diverticulitis. Pericolonic lymph nodes are present, with or without pericolonic edema, diagnosis is colon cancer.	2
23. Padidar AM, Jeffrey RB, Jr., Mindelzun RE, Dolph JF. Differentiating sigmoid diverticulitis from carcinoma on CT scans: mesenteric inflammation suggests diverticulitis. *AJR* 1994; 163(1):81-83.	13	69	Retrospective review to assess ability of specific CT findings in differentiating diverticulitis and carcinoma.	Fluid in mesentery had sensitivity of 36%, specificity of 90% and PPV of 89% for diverticulitis. Vascular engorgement had sensitivity of 29%, specificity of 100% and PPV of 100%. CT findings of fluid at the root of the mesentery and vascular engorgement are useful in distinguishing sigmoid diverticulitis from carcinoma of the sigmoid.	3

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Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
24. Shen SH, Chen JD, Tiu CM, et al. Differentiating colonic diverticulitis from colon cancer: the value of computed tomography in the emergency setting. *J Chin Med Assoc* 2005; 68(9):411-418.	13	54	A retrospective study of the helical CT scans of 40 patients diagnosed with diverticulitis and 14 patients diagnosed with colon cancer, in order to establish practical diagnostic criteria to differentiate colonic diverticulitis from colon cancer by CT in the emergency department (ER).	Specific CT criteria help to differentiate colonic diverticulitis from colon cancer. The most valuable imaging findings for diverticulitis were the presence of non-inflamed diverticulum, inflamed diverticulum, mild degree of enhancement, and small lymph node size. CT scan with intravenous contrast administration would be the best noninvasive imaging modality in the ER for the accurate diagnosis and appropriate management of such disease.	2
25. Goh V, Halligan S, Taylor SA, Burling D, Bassett P, Bartram CI. Differentiation between diverticulitis and colorectal cancer: quantitative CT perfusion measurements versus morphologic criteria--initial experience. *Radiology* 2007; 242(2):456-462.	9	60	To determine whether CT perfusion measurements in prospectively recruited patients can be used to differentiate between diverticulitis and colorectal cancer and to compare this discrimination with that of standard morphologic criteria.	CT perfusion measurements enable differentiation and better discrimination, in comparison with morphologic criteria, between cancer and diverticulitis.	3
26. American College of Radiology. *Manual on Contrast Media*. Available at: http://www.acr.org/SecondaryMainMenuCategories/quality_safety/contrast_manual.aspx.	15	N/A	Guidance document on contrast media to assist radiologists in recognizing and managing risks associated with the use of contrast media.	N/A	3

Evidence Table Key

Study Type Key

Numbers 1-7 are for studies of therapies while numbers 8-15 are used to describe studies of diagnostics.

1. Randomized Controlled Trial — Treatment
2. Controlled Trial
3. Observation Study
    a. Cohort
    b. Cross-sectional
    c. Case-control
4. Clinical Series
5. Case reviews
6. Anecdotes
7. Reviews

8. Randomized Controlled Trial — Diagnostic
9. Comparative Assessment
10. Clinical Assessment
11. Quantitative Review
12. Qualitative Review
13. Descriptive Study
14. Case Report
15. Other (Described in text)

Strength of Evidence Key

- Category 1 - The conclusions of the study are valid and strongly supported by study design, analysis and results.
- Category 2 - The conclusions of the study are likely valid, but study design does not permit certainty.
- Category 3 - The conclusions of the study may be valid but the evidence supporting the conclusions is inconclusive or equivocal.
- Category 4 - The conclusions of the study may not be valid because the evidence may not be reliable given the study design or analysis.