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Review Article

An Update on the Management of Right-Sided Colonic Diverticulitis: Narrative

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Abstract: Right-sided colonic diverticulitis is commonly seen in younger and predominantly Asian patients, and it presents with pain over the right lower abdomen. The diagnosis is usually confirmed by imaging modalities like computerized tomography. It is divided into complicated or uncomplicated diverticulitis, with uncomplicated diverticulitis being managed with non-operative treatment. Complicated diverticulitis is managed with surgical resection, with either a right hemicolectomy or an ileocecal resection being performed. In this article, we will look at the management of right-sided colonic diverticulitis, especially the role of non-operative management and surgical resection.

Keywords: "Ascending Colon Diverticulitis"," Cecal Diverticulitis"," Diverticulectomy" Hinchey Classification"," Ileocecal Resection"," Right Diverticulitis", and "Right Hemicolectomy".

INTRODUCTION

Diverticulitis is characterized by inflammation of the outpouchings of the colonic mucosa and submucosal layers. The sigmoid colon is the most common site, followed by the cecum and ascending colon. This condition is predominantly seen in elderly patients, with a higher incidence in male patients than female patients. Sigmoid or left-sided diverticulitis is seen in the Western population, and cecal or right-sided diverticulitis is predominantly seen in the Asian population. Some of the risk factors for acute diverticulitis include a diet low in fiber, smoking, and obesity. The diagnosis of acute diverticulitis is usually confirmed by imaging modalities like ultrasound and computerized tomography. The management can be divided into conservative treatment with antibiotics or surgical resection(Bhatia & Mattoo, 2023; Monari *et al*., 2017; Oh *et al*., 2022; Palacios Huatuco *et al*., 2023; Weizman & Nguyen, 2011).

Acute right-sided diverticulitis is associated with 75% of most cases of diverticulitis that are seen in the Asian population, predominantly in the younger population, and it accounts for 1.5% of the presentation in the Western population. It is often solitary in appearance, and the clinical presentation is pain over the right lower abdomen and may be diagnosed as acute appendicitis. Blood investigations may reveal leukocytosis and raised inflammatory markers. Imaging modalities like computerized tomography can diagnose right-sided diverticulitis. The Hinchey classification is used to grade the diverticulitis. Most uncomplicated right-sided diverticulitis is managed conservatively with intravenous antibiotics, with surgical management in the form of diverticulectomy, ileocecal resection, or a right hemicolectomy being performed for complicated right-sided diverticulitis(Chen *et al*., 2020; Epifani *et al*., 2021; Matsushima, 2010; Saad & Saikaly, 2021; Tan *et al*., 2014; Turner *et al*., 2021).

The World Society of Emergency Surgeons (WSES), in its guidelines for the management of acute colonic diverticulitis in the emergency setting, has recommended that, though right-sided colonic diverticulitis is associated with a lower incidence than left-sided colonic diverticulitis, its diagnosis and management should follow those used for the management of left-sided colonic diverticulitis. Due to the absence of any other guidelines, the diagnosis and

treatment of right-sided colonic diverticulitis will depend on the treating surgeon (Sartelli *et al*., 2020).

The management of right-sided colonic diverticulitis has been an area of controversy due to its low numbers, and it is often confused with acute appendicitis. The management can be divided into conservative treatment with antibiotics, and surgical management includes performing a diverticulectomy, ileocecal resection, or a right hemicolectomy. As there is no consensus on the surgical management of right-sided diverticulitis, we have conducted this review article to investigate the management options in the treatment of right-sided colonic diverticulitis. We conducted a literature review using PUBMED, Cochrane database of clinical reviews, Semantic Scholar, and Google Scholar, looking for clinical trials, observational studies, cohort studies, systematic reviews, and meta-analyses from 1990 to 2025. We used the following keywords: "right diverticulitis", "Hinchey classification", "Cecal diverticulitis", "Ascending colon diverticulitis "," right hemicolectomy "," Ileocecal resection", and "diverticulectomy". All articles were in the English language only. Further articles were obtained by manual cross-referencing of the literature. Case reports and studies with fewer than 10 patients and editorials were excluded. Adult male and female patients were included in this study. Pediatric patients were excluded from this study.

DISCUSSION

Non-Operative Management of Right-Sided Colonic Diverticulitis

Non-operative management of right-sided colonic diverticulitis involves the use of intravenous antibiotics and analgesics, after the diagnosis was made using computerized tomography. The main concern from non-operative management is the risk of recurrence, which could be as high as 25%. Issa *et al.,* conducted a retrospective study on 15 patients who had undergone conservative treatment and had a recurrence rate of 6.6% after a follow-up of 32 months (Issa *et al.,* 2012). A review of 220 patients who had undergone non-operative treatment of right-sided colonic diverticulitis by Tan et al also showed a recurrence rate of 8% after a follow-up period of 62 months (Tan *et al*., 2013). Another study that was conducted by Kim et al, which included 135 patients who had undergone conservative treatment, and after a follow-up of 37.3 months, the recurrence rate was 17.5%(Kim et al., 2010). Some of the risk factors for failure of conservative treatment include age above 50, the presence of recurrent attacks, and an elevated C-reactive protein (CRP) level (Ma *et al*., 2022; Park *et al*., 2021).

A systematic review and meta-analysis were conducted by Lee *et al*., on the recurrence of acute right colonic diverticulitis following non-operative management. A total of 11 studies with 1584 patients were included in this study, and after a follow-up period of 34.2 months, the recurrence rate was 12%. This study concluded that non-operative management of right-sided colonic diverticulitis was feasible and associated with a low recurrence rate (Y. F. Lee *et al*., 2020). Another systematic review and meta-analysis were conducted by Lamb *et al*., comparing elective resection versus observation after non-operative management of complicated diverticulitis with abscess. A total of twenty-two studies with 1051 patients were included in this study, and the overall recurrence rate was 28% and the risk of recurrent diverticulitis was higher in these groups of patients (Lamb & Kaiser, 2014). A systematic review and meta-analysis on the conservative treatment of uncomplicated right-sided diverticulitis by Lee *et al*., A total of 21 studies with 2811 patients were included in this study, and the pooled recurrence rate was 10.9%. This study concluded that non-operative treatment was a viable option in the management of right-sided diverticulitis (J. H. Lee *et al*., 2021).

A systematic review and meta-analysis on the outcomes of right-sided and left-sided colonic diverticulitis following non-operative management was conducted by Huang *et al*., A total of 32 studies with 10,129 patients were included in this study, and the pooled recurrence rate was 10% for right-sided colonic diverticulitis and 20% for left-sided colonic diverticulitis. The treatment failure rate was 5% for right–sided colonic diverticulitis and 4% for left-sided colonic diverticulitis. This study showed that non-operative treatment was effective in the management of right-sided colonic diverticulitis(Huang *et al*., 2022).A meta-analysis of the demographic and prognostic significance of the right-sided versus left-sided acute diverticulitis was conducted by Hajibandeh *et al*., Nine studies with 2933 patients were included in this study, and right-sided colonic diverticulitis was seen in younger patients; the risk of complicated diverticulitis was lower, the risk of recurrence, and emergency surgery (Hajibandeh *et al*., 2020).A retrospective study by Lee *et al*., also compared the clinical features of right-sided and left-sided colonic diverticulitis, and they concluded that right-sided colonic diverticulitis was seen in younger patients, male patients, and reduced stay in the hospital (K. yong Lee *et al*., 2020).

Table showing the recurrence rates following conservative treatment for right-sided diverticulitis.

Study	Study Type	Year	N=numbers	Recurrence rate (%)
Lamb *et al*.,	Systematic review & Meta-analysis	2014	1051	18%
Lee *et al*.,	Systematic review & meta-analysis	2020	1584	12%

Surgical Management of Right-Sided Colonic Diverticulitis

The surgical management of right-sided colonic diverticulitis can be divided into a right hemicolectomy or an ileocecal resection. These are indicated with complicated right-sided diverticulitis, and an open or laparoscopic approach can be performed on them(Hildebrand *et al*., 2007).A review of the surgical outcomes from the national inpatient sample database from the United States confirmed that open right hemicolectomy was the most common surgical procedure for right-sided colonic diverticulitis(Schlussel *et al*., 2016).The post-operative complications like anastomotic leakage, intra-abdominal abscess, and enterocutaneous fistula rates are reduced in patients who undergo a right hemicolectomy or an ileocecal resection for right-sided colonic diverticular disease(Law *et al*., 2001).

Kwon *et al*., compared laparoscopic versus open surgery for the surgical treatment of complicated right colonic diverticulitis. A total of 59 patients were included in this retrospective study, with 28 patients undergoing laparoscopic surgery and 31 undergoing open surgery. Laparoscopic surgery was associated with reduced postoperative morbidity, length of hospital stay, and reduced analgesia usage, but the operative time was longer. This study showed that laparoscopic right hemicolectomy was feasible for the management of right-sided colonic diverticulitis (Kwon *et al*., 2012). Laparoscopic diverticulectomy was compared to non-operative treatment for uncomplicated right-sided colonic diverticulitis by Luu *et al*., A total of 155 patients were included in this study, of which 81 underwent non-operative treatment and 74 underwent surgery. There were no significant differences concerning the success rate and complication rate for these cases, and this study concluded that both treatment options were effective and safe for the management of uncomplicated right-sided diverticulitis (Luu *et al*., 2020).

The short and long-term outcomes of right-sided colonic diverticulitis were assessed by Lauricella *et al*., A total of 233 patients with right-sided colonic diverticulitis were included in this study. The patients who had undergone surgery had minimal morbidity, and there was no recurrence after a follow-up of one year. This study concluded that surgical therapy was associated with reduced morbidity and was a viable option in the management of right-sided colonic diverticulitis (Lauricella *et al*., 2024).A critical appraisal on the role and outcome of emergency colectomy for uncomplicated right-sided colonic diverticulitis concluded that surgical therapy is associated with a higher morbidity, and non-operative management may be a better treatment option (Leung *et al*., 2007).

The effect of emergency surgery was compared for right and left-sided colonic diverticulitis, were assessed by Tsang *et al.,* A total of 360 patients were included in this study, of which 218 had right-sided diverticulitis and 142 had left-sided diverticulitis. The operative morbidity and mortality were higher in patients with left-sided diverticulitis when compared to right-sided diverticulitis (Tsang *et al*., 2021). A similar retrospective study that looked at the outcomes of left and right complicated colonic diverticulitis also concluded that right-sided diverticulitis was associated with better outcomes when compared to left-sided diverticulitis (Chung *et al*., 2016; Nguyen *et al*., 2025).

CONCLUSIONS

The diagnosis and management of right-sided colonic diverticulitis is still an area of concern due to the lack of any guidelines. The diagnosis is confirmed by imaging modalities like computerized tomography. The treatment can be divided into non-operative treatment for uncomplicated right-sided colonic diverticulitis and surgical resection in the form of right hemicolectomy or ileocecal resection for complicated diverticulitis. Elective resection need not be done as a routine due to the low recurrence rate. In most cases of right-sided colonic diverticulitis, the management is often decided by the treating surgeon.

Conflict of Interest: There is no conflict of interest.

REFERENCES

- Bhatia, M., & Mattoo, A. (2023). Diverticulosis and Diverticulitis: Epidemiology, Pathophysiology, and Current Treatment Trends. *Cureus*. https://doi.org/10.7759/cureus.43158
- Chen, Z., Zhang, B., Wu, D., & Jin, Y. (2020). Characteristics of predominantly right-sided colonic diverticulitis without need for colectomy. *BMC Surgery*, *20*(1). https://doi.org/10.1186/s12893-020-00863-z
- Chung, B. H., Ha, G. W., Lee, M. R., & Kim, J. H. (2016). Management of colonic diverticulitis tailored to location and severity: Comparison of the right and the left colon. *Annals of Coloproctology*, *32*(6), 228–233. https://doi.org/10.3393/ac.2016.32.6.228
- Epifani, A. G., Cassini, D., Cirocchi, R., Accardo, C., Di Candido, F., Ardu, M., & Baldazzi, G. (2021). Right sided diverticulitis in western countries: A review. *World Journal of Gastrointestinal Surgery*, *13*(12), 1721–1735. https://doi.org/10.4240/wjgs.v13.i12.1721
- Hajibandeh, S., Hajibandeh, S., Smart, N. J., & Maw, A. (2020). Meta-analysis of the demographic and prognostic significance of right-sided versus left-sided acute diverticulitis. *Colorectal Disease*, *22*(12), 1908–1923. https://doi.org/10.1111/codi.15328
- Hildebrand, P., Kropp, M., Stellmacher, F., Roblick, U. J., Bruch, H. P., & Schwandner, O. (2007). Surgery for right-sided colonic diverticulitis: Results of a 10-year-observation period.

Langenbeck's Archives of Surgery, *392*(2), 143–147. https://doi.org/10.1007/s00423-006-0109-6

- Huang, S. S., Sung, C. W., Wang, H. P., & Lien, W. C. (2022). The outcomes of right-sided and left-sided colonic diverticulitis following non-operative management: a systematic review and meta-analysis. In *World Journal of Emergency Surgery* (Vol. 17, Issue 1). BioMed Central Ltd. https://doi.org/10.1186/s13017-022-00463-7
- Issa, N., Paran, H., Yasin, M., & Neufeld, D. (2012). Conservative treatment of right-sided colonic diverticulitis. *European Journal of Gastroenterology and Hepatology*, *24*(11), 1254–1258. https://doi.org/10.1097/MEG.0b013e328357e672
- Kim, M. R., Kye, B. H., Kim, H. J., Cho, H. M., Oh, S. T., & Kim, J. G. (2010). Treatment of right colonic diverticulitis: The role of nonoperative treatment. *Journal of the Korean Society of Coloproctology*, *26*(6), 402–406. https://doi.org/10.3393/jksc.2010.26.6.402
- Kwon, J. W., Kim, B. S., Park, H. C., Oh, H. K., Shin, R., Ryoo, S. B., Park, K. J., & Lee, B. H. (2012). Surgical treatment of complicated right colonic diverticulitis: Laparoscopic versus open surgery. *Surgical Endoscopy*, *26*(10), 2926–2930. https://doi.org/10.1007/s00464-012-2286-4
- Lamb, M. N., & Kaiser, A. M. (2014). Elective resection versus observation after nonoperative management of complicated diverticulitis with abscess: A systematic review and meta-analysis. *Diseases of the Colon and Rectum*, *57*(12), 1430–1440. https://doi.org/10.1097/DCR.0000000000000230
- Lauricella, S., Brucchi, F., Palmisano, D., Baldazzi, G., Bottero, L., Cassini, D., & Faillace, G. (2024). Right-sided colonic diverticulitis. Short and long-term surgical outcomes and 2-year quality of life. *World Journal of Surgery*, *48*(2), 484–492. https://doi.org/10.1002/wjs.12065
- Law, W. L., Lo, C. Y., & Chu, K. W. (2001). Emergency surgery for colonic diverticulitis: Differences between right-sided and left-sided lesions. *International Journal of Colorectal Disease*, *16*(5), 280–284. https://doi.org/10.1007/s003840100339
- Lee, J. H., Ahn, B. K., & Lee, K. H. (2021). Conservative treatment of uncomplicated right-sided diverticulitis: a systematic review and meta-analysis. *International Journal of Colorectal Disease*, *36*(8), 1791–1799. https://doi.org/10.1007/s00384-021-03913-x
- Lee, K. yong, Lee, J., Park, Y. Y., Kim, Y., & Oh, S. T. (2020). Difference in Clinical Features between Right- and Left-Sided Acute Colonic Diverticulitis. *Scientific Reports*, *10*(1). https://doi.org/10.1038/s41598-020-60397-5
- Lee, Y. F., Tang, D. D., Patel, S. H., Battaglia, M. A., Shanker, B. A., & Cleary, R. K. (2020). Recurrence of Acute Right Colon Diverticulitis Following Nonoperative Management: A Systematic Review and Meta-analysis. In *Diseases of the Colon and Rectum* (Vol. 63, Issue 10, pp. 1466–1473). Lippincott Williams and Wilkins. https://doi.org/10.1097/DCR.0000000000001787
- Leung, W. W., Lee, J. F. Y., Liu, S. Y. W., Mou, J. W. C., Ng, S. S. M., Yiu, R. Y. C., & Li, J. C. M. (2007). Critical appraisal on the role and outcome of emergency colectomy for uncomplicated right-sided colonic diverticulitis. *World Journal of Surgery*, *31*(2), 383–387. https://doi.org/10.1007/s00268-006-0236-9
- Luu, L. H., Vuong, N. L., Yen, V. T. H., Phuong, D. T. T., Vu, B. K., Thanh, N. V., Khanh, N. T., & Van Hai, N. (2020). Laparoscopic diverticulectomy versus non-operative treatment for uncomplicated right colonic diverticulitis. *Surgical Endoscopy*, *34*(5), 2019–2027. https://doi.org/10.1007/s00464-019-06981-x
- Ma, Z., Liu, W., Zhou, J., Yao, L., Xie, W., Su, M., Yang, J., Shao, J., & Chen, J. (2022). Management and long-term outcomes of acute right colonic diverticulitis and risk factors of recurrence. *BMC Surgery*, *22*(1). https://doi.org/10.1186/s12893-022-01578-z
- Matsushima, K. (2010). Management of right-sided diverticulitis: A retrospective review from a hospital in Japan. *Surgery Today*, *40*(4), 321–325. https://doi.org/10.1007/s00595-008-4055-5
- Monari, F., Cervellera, M., Pirrera, B., D'Errico, U., Vaccari, S., Alberici, L., & Tonini, V. (2017). Right-sided acute diverticulitis: A single Western center experience. *International Journal of Surgery*, *44*, 128–131. https://doi.org/10.1016/j.ijsu.2017.06.025
- Nguyen, A. T., Pham, Q. T., Van Tran, H., Truong, H. V., & Tran, L. H. (2025). The outcomes of right and left complicated colonic diverticulitis. *Surgery Open Science*, *27*, 31–35. https://doi.org/10.1016/j.sopen.2025.06.005
- Oh, M. Y., Shin, R., Heo, S. C., Lim, H. K., Kim, M. J., Park, J. W., Ryoo, S. B., Jeong, S. Y., & Park, K. J. (2022). Investigation of the clinical features and recurrence patterns of acute right-sided colonic diverticulitis: A retrospective cohort study. *Annals of Medicine and Surgery*, *81*. https://doi.org/10.1016/j.amsu.2022.104431
- Palacios Huatuco, R. M., Pantoja Pachajoa, D. A., Liaño, J. E., Picón Molina, H. A., Palencia, R., Doniquian, A. M., & Parodi, M. (2023). Right-sided acute diverticulitis in the West: experience at a university hospital in Argentina. *Annals of Coloproctology*, *39*(2), 123–130. https://doi.org/10.3393/AC.2021.00402.0057
- Park, Y. Y., Nam, S., Han, J. H., Lee, J., & Cheong, C. (2021). Predictive factors for conservative treatment failure of right colonic diverticulitis. *Annals of Surgical Treatment and Research*, *100*(6), 347–355. https://doi.org/10.4174/astr.2021.100.6.347

- Saad, M. K., & Saikaly, E. (2021). Article 1033 Citation: Saad MK, Saikaly E. Right Sided Colonic Diverticulitis: A Comprehensive Review. *Surgery Clinics Journal*, *2*(4), 1033.
- Sartelli, M., Weber, D. G., Kluger, Y., Ansaloni, L., Coccolini, F., Abu-Zidan, F., Augustin, G., Ben-Ishay, O., Biffl, W. L., Bouliaris, K., Catena, R., Ceresoli, M., Chiara, O., Chiarugi, M., Coimbra, R., Cortese, F., Cui, Y., Damaskos, D., De' Angelis, G. L., … Catena, F. (2020). 2020 update of the WSES guidelines for the management of acute colonic diverticulitis in the emergency setting. In *World Journal of Emergency Surgery* (Vol. 15, Issue 1). BioMed Central Ltd. https://doi.org/10.1186/s13017-020-00313-4
- Schlussel, A. T., Lustik, M. B., Cherng, N. B., Maykel, J. A., Hatch, Q. M., & Steele, S. R. (2016). Right-Sided Diverticulitis Requiring Colectomy: an Evolving Demographic? A Review of Surgical Outcomes from the National Inpatient Sample Database. *Journal of Gastrointestinal Surgery*, *20*(11), 1874–1885. https://doi.org/10.1007/s11605-016-3233-9
- Tan, K. K., Wong, J., & Sim, R. (2013). Non-operative treatment of right-sided colonic diverticulitis has good long-term outcome: A review of 226 patients. *International Journal of Colorectal Disease*, *28*(6), 849–854. https://doi.org/10.1007/s00384-012-1595-3
- Tan, K. K., Wong, J., Yan, Z., Chong, C. S., Liu, J. Z., & Sim, R. (2014). Colonic diverticulitis in young Asians: A predominantly mild and right-sided disease. *ANZ Journal of Surgery*, *84*(3), 181–184. https://doi.org/10.1111/ans.12273
- Tsang, J. S., Chung Foo, C., Yip, J., Kwok Choi, H., Lun Law, W., & Siu Hung Lo, O. (2021). Emergency surgery comparison of right versus left acute colonic diverticulitis: A 10-year outcome analysis. *Surgeon*, *19*(3), 150–155. https://doi.org/10.1016/j.surge.2020.04.007
- Turner, G. A., O'Grady, M. J., Purcell, R. V., & Frizelle, F. A. (2021). The epidemiology and etiology of right-sided colonic diverticulosis: A review. In *Annals of Coloproctology* (Vol. 37, Issue 4, pp. 196–203). Korean Society of Coloproctology. https://doi.org/10.3393/AC.2021.00192.0027
- Weizman, A. V., & Nguyen, G. C. (2011). Diverticular disease: epidemiology and management. *Canadian journal of gastroenterology = Journal canadien de gastroenterologie*, *25*(7), 385–389. https://doi.org/10.1155/2011/795241