World Journal of *Gastrointestinal Endoscopy*

World J Gastrointest Endosc 2024 August 16; 16(8): 439-501





Published by Baishideng Publishing Group Inc

WJ

Geration Content of Co

Contents

Monthly Volume 16 Number 8 August 16, 2024

EDITORIAL

439 Challenges and advancing strategies of endoscopic submucosal dissection for early gastric cancer: The puzzle of eCura C1

Calabrese G, Manfredi G, Maida MF, Mandarino FV, Shahini E, Pugliese F, Cecinato P, Laterza L, Sinagra E, Sferrazza S

445 Cold snare polypectomy: A closer look at the efficacy and limitations for polyps 10-20 mm in size Chaptini LA, Jalloul S, Karam K

MINIREVIEWS

451 Unveiling hidden outcomes in malignant gastric outlet obstruction research - insights from a "Pancreas 2000" review

Vilas-Boas F, Rizzo GEM, De Ponthaud C, Robinson S, Gaujoux S, Capurso G, Vanella G, Bozkırlı B

ORIGINAL ARTICLE

Observational Study

Effectiveness of serological markers of gastric mucosal atrophy in the gastric precancer screening and in 462 cancer prevention

Kotelevets SM. Chekh SA. Chukov SZ

CASE REPORT

472 Colonic schistosomiasis mimicking cancer, polyp, and inflammatory bowel disease: Five case reports and review of literature

Mulate ST, Nur AM, Tasamma AT, Annose RT, Dawud EM, Ekubazgi KW, Mekonnen HD, Mohammed HY, Hailemeskel MB, Yimer SA

- 483 Esophageal ulcer and multisystem inflammatory syndrome after COVID-19: A case report Yang N, Liu Z, Jin T, Xin HW, Gu L, Zheng Y, Zhou HX, Li N, Liu XJ
- 489 Endoscopic ultrasound-guided treatment of isolated gastric varices entwined with arteries: A case report Zhang HY, He CC, Zhong DF
- 494 Heterotopic mesenteric ossification caused by trauma: A case report Zhang BF, Liu J, Zhang S, Chen L, Lu JZ, Zhang MQ

RETRACTION NOTE

500 Retraction note to: Association between triglyceride-glucose index and colorectal polyps: A retrospective cross-sectional study

Teng YJ, Yang YX, Yang JJ, Lu QY, Shi JY, Xu JH, Bao J, Wang QH



Contents

World Journal of Gastrointestinal Endoscopy

Monthly Volume 16 Number 8 August 16, 2024

ABOUT COVER

Editorial Board Member of World Journal of Gastrointestinal Endoscopy, Maria Elena Riccioni, MD, PhD, Adjunct Professor, Surgical Endoscopy Unit, Catholic University of Rome, Rome 00168, Italy. mariaelena.riccioni@unicatt.it

AIMS AND SCOPE

The primary aim of World Journal of Gastrointestinal Endoscopy (WJGE, World J Gastrointest Endosc) is to provide scholars and readers from various fields of gastrointestinal endoscopy with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

WJGE mainly publishes articles reporting research results and findings obtained in the field of gastrointestinal endoscopy and covering a wide range of topics including capsule endoscopy, colonoscopy, double-balloon enteroscopy, duodenoscopy, endoscopic retrograde cholangiopancreatography, endosonography, esophagoscopy, gastrointestinal endoscopy, gastroscopy, laparoscopy, natural orifice endoscopic surgery, proctoscopy, and sigmoidoscopy.

INDEXING/ABSTRACTING

The WJGE is now abstracted and indexed in Emerging Sources Citation Index (Web of Science), PubMed, PubMed Central, Reference Citation Analysis, China Science and Technology Journal Database, and Superstar Journals Database. The 2024 Edition of Journal Citation Reports® cites the 2023 journal impact factor (JIF) for WJGE as 1.4; JIF without journal self cites: 1.4; 5-year JIF: 1.7; JIF Rank: 111/143 in gastroenterology and hepatology; JIF Quartile: Q4; and 5-year JIF Quartile: Q4.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: Yi-Xuan Cai; Production Department Director: Xu Guo; Cover Editor: Jia-Ping Yan.

INSTRUCTIONS TO AUTHORS
https://www.wjgnet.com/bpg/gerinfo/204
GUIDELINES FOR ETHICS DOCUMENTS
https://www.wjgnet.com/bpg/GerInfo/287
GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH
https://www.wjgnet.com/bpg/gerinfo/240
PUBLICATION ETHICS
https://www.wjgnet.com/bpg/GerInfo/288
PUBLICATION MISCONDUCT
https://www.wjgnet.com/bpg/gerinfo/208
ARTICLE PROCESSING CHARGE
https://www.wjgnet.com/bpg/gerinfo/242
STEPS FOR SUBMITTING MANUSCRIPTS
https://www.wjgnet.com/bpg/GerInfo/239
ONLINE SUBMISSION
https://www.f6publishing.com
PUBLISHING PARTNER'S OFFICIAL WEBSITE
http://www.cd120.com/index.html

© 2024 Baishideng Publishing Group Inc. All rights reserved. 7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA E-mail: office@baishideng.com https://www.wjgnet.com



E $W \hat{U}$

World Journal of *Gastrointestinal* Endoscopy

Submit a Manuscript: https://www.f6publishing.com

World J Gastrointest Endosc 2024 August 16; 16(8): 483-488

DOI: 10.4253/wjge.v16.i8.483

ISSN 1948-5190 (online)

CASE REPORT

Esophageal ulcer and multisystem inflammatory syndrome after COVID-19: A case report

Ni Yang, Zhen Liu, Tong Jin, Hai-Wei Xin, Li Gu, Yue Zheng, Hui-Xing Zhou, Ning Li, Xin-Juan Liu

Specialty type: Gastroenterology and hepatology

Provenance and peer review: Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's classification Scientific Quality: Grade B, Grade С

Novelty: Grade B, Grade B Creativity or Innovation: Grade C, Grade C

Scientific Significance: Grade B, Grade C

P-Reviewer: Alireza P; Toh Y

Received: May 21, 2024 Revised: June 26, 2024 Accepted: July 3, 2024 Published online: August 16, 2024 Processing time: 72 Days and 13.4 Hours



Ni Yang, Zhen Liu, Tong Jin, Hai-Wei Xin, Ning Li, Xin-Juan Liu, Department of Gastroenterology, Beijing Chao-Yang Hospital, Capital University of Medical Science, Beijing 100020, China

Li Gu, Department of Infectious Diseases and Clinical Microbiology, Beijing Chao-Yang Hospital, Capital University of Medical Science, Beijing 100020, China

Yue Zheng, Department of Surgical Intensive Care Unit, Beijing Chao-Yang Hospital, Capital University of Medical Science, Beijing 100020, China

Hui-Xing Zhou, Department of Hematology, Beijing Chao-Yang Hospital, Capital University of Medical Science, Beijing 100020, China

Corresponding author: Ning Li, MM, Attending Doctor, Department of Gastroenterology, Beijing Chao-Yang Hospital, Capital University of Medical Science, No. 8 Gongrentiyuchang South Road, Chaoyang District, Beijing 100020, China. ning0116@163.com

Abstract

BACKGROUND

Multisystem inflammatory syndrome in adults (MIS-A) is a rare but severe disease occurring several weeks after severe acute respiratory syndrome coronavirus 2 infection. It develops in adults with inflammation of different organs including the gastrointestinal tract, heart, kidneys, skin and hematopoietic system.

CASE SUMMARY

We present a 58-year-old Chinese man diagnosed with MIS-A. His chief complaints were fever, generalized fatigue and anorexia, accompanied with rashes on his back. Further examination showed cardiac, renal and liver injury. He had melena and gastroscopy indicated esophageal ulcer and severe esophagitis. Repeated blood and sputum culture did not show growth of bacteria or fungi. Antibiotic treatment was stopped due to unsatisfactory performance. His condition improved after prednisone and other supportive treatment.

CONCLUSION

Gastrointestinal involvement in MIS-A is not uncommon. Intestinal involvement predominates, and esophageal involvement is rarely reported. Esophageal ulcer with bleeding could also be a manifestation of MIS-A.

Key Words: Multisystem inflammatory syndrome; Esophageal ulcer; SARS-CoV-2; Gastrointestinal bleeding; Case report



©The Author(s) 2024. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Multisystem inflammatory syndrome in adults (MIS-A) is a rare but severe disease occurring several weeks after severe acute respiratory syndrome coronavirus 2 infection. We present a 58-year-old Chinese man diagnosed with MIS-A who had multiple organ damage. The patient had melena and gastroscopy indicated esophageal ulcer and severe esophagitis. His condition improved after prednisone and other supportive treatment. Clinicians should take MIS-A into consideration when they face unexplained inflammation and multiorgan damage. Gastrointestinal involvement in MIS-A is not uncommon. Intestinal involvement predominates, and esophageal involvement is rarely reported.

Citation: Yang N, Liu Z, Jin T, Xin HW, Gu L, Zheng Y, Zhou HX, Li N, Liu XJ. Esophageal ulcer and multisystem inflammatory syndrome after COVID-19: A case report. World J Gastrointest Endosc 2024; 16(8): 483-488 URL: https://www.wjgnet.com/1948-5190/full/v16/i8/483.htm DOI: https://dx.doi.org/10.4253/wjge.v16.i8.483

INTRODUCTION

Multisystem inflammatory syndrome (MIS) is a rare but severe disease related to COVID-19. It develops in adults and children with inflammation of different organs including the gastrointestinal tract, heart, kidneys, skin and hematopoietic system. When this phenomenon occurs in people aged > 21 years, it is called MIS in adults (MIS-A)[1]. Here, we report a case of MIS-A in a 58-year-old man after the 2022 severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) omicron variant in Beijing, China.

CASE PRESENTATION

Chief complaints

A 58-year-old male patient was admitted to hospital in January 2023, with a chief complaint of fever for 1 day, accompanied by fatigue, anorexia, mild cough, and whitish yellow sputum after becoming overtired.

History of present illness

The patient's highest body temperature was 39.6°C. He was first treated with empirical antibiotics of biapenem and supportive treatment. On day 6, melena suddenly occurred and his hemoglobin dropped to 64 g/L. Gastroscopy indicated a bleeding esophageal ulcer (Figure 1) and severe esophagitis. Gastrointestinal hemorrhage stopped after endoscopic hemostasis, abrosia, and proton pump inhibitor treatment. Body temperature dropped to 37°C after taking antipyretics, and rose to 39°C. His white blood cell count, serum creatinine, liver transaminase and total bilirubin continued to increase. The patient once received clindamycin infusion in a small clinic on day 1 from onset before hospitalization. However, allergy to clindamycin could not explain continuous deterioration of liver and kidney function after withdrawal. Empirical antibiotics changed to cefoperazone/sulbactam. Antibiotic treatment was stopped due to unsatisfactory performance while the patient's body temperature began to drop to around 37°C. Cardiac, renal and liver insufficiency began to recover (Figure 2). The patient also regained his strength and appetite.

History of past illness

He was diagnosed with SARS-CoV-2 infection by antigen test 5 weeks before, with symptoms of mild upper respiratory tract infection. The antigen test was negative 4 weeks before onset of fever.

Personal and family history

The patient had no specific personal history. His uncle was diagnosed with rhabdomyolysis and the cause was unknown.

Physical examination

On the first day of hospitalization, the patient had rashes on his back (Figure 3A). He had no palpable lymph node enlargement. Then his skin and sclera were gradually stained yellow. On day 12 of complained symptoms, the rash remained and turned darker (Figure 3B).

Laboratory examinations

The polymerase chain reaction test for SARS-CoV-2 was negative. Immunoglobulin G antibody for SARS-CoV-2 was positive. His laboratory indexes showed abnormal liver function, hypoproteinemia, coagulation disorder, and acute renal insufficiency. On day 16, brain natriuretic peptide increased significantly. Repeated blood culture and sputum culture did not show growth of bacteria or fungi. Epstein-Barr virus DNA in the blood was positive, with low viral load. Blood





Figure 1 Computed tomography and endoscopy. A-I: Chest computed tomography (CT) on day 1 after onset of complained symptoms showing pulmonary inflammation; A-II: Chest CT on day 12 showing pulmonary edema; B-I: Endoscopic findings on day 9 showing esophageal ulcer 34 cm from the incisor; B-II: Endoscopic findings on day 19 showing smooth esophageal mucosa.



Figure 2 Changes of total bilirubin, creatinine and brain natriuretic peptide. TBIL: Total bilirubin; Cr: Creatinine; BNP: Brain natriuretic peptide.

analysis did not show atypic lymphocytes or elevated lymphocyte count. His autoantibody test and bone marrow examination were normal. No hemophagocytes were seen in the bone marrow.

Imaging examinations

Chest computed tomography (CT) revealed lung inflammation without typical features of viral pneumonia (Figure 1A). His abdominal imaging was normal without hepatosplenomegaly. CT on day 12 revealed pneumonedema (Figure 1A). Echocardiography showed reduced left ventricular systolic and diastolic function, as well as mild pericardial effusion.



Baishideng® WJGE | https://www.wjgnet.com



Figure 3 Patients with back rash at different times. A: Rash on day 2 of complained symptoms; B: Rash on day 12 of the symptoms.

Venous thrombosis was found in the left lower extremity by ultrasound examination.

FINAL DIAGNOSIS

MIS-A.

TREATMENT

The patient was administered oral glucocorticoid 40 mg/d (approximately 0.5 mg/kg/d).

OUTCOME AND FOLLOW-UP

Ferrit and interleukin-6 were lower than before. A second gastroscopy on day 19 showed that the esophageal ulcer was completely healed (Figure 1B). The patient was discharged on day 32.

DISCUSSION

It was found that the rate of MIS-A was 9.9% and MIS-A-related mortality was 35.3%[2]. MIS usually occurred about 4 weeks after COVID-19 infection. In a recent systematic review[3], the organ systems most affected by MIS-A were hematological (92%), cardiovascular (87%), gastrointestinal (83%) and respiratory (74%). Our patient had multiple organ damage, including gastrointestinal tract, liver, heart and kidneys, at approximately 5 weeks after SARS-CoV-2 infection onset. Compared with patients with multisystem inflammatory syndrome in children (MIS-C), patients with MIS-A were more likely to have cardiac dysfunction and thrombosis[3,4]. MIS-C patients were more likely to present with dermatological and mucocutaneous manifestations[5].

In another systematic review, 73.4% of MIS-A patients had gastrointestinal symptoms[6]. Two cases of MIS-C undergoing endoscopy have been reported[7,8]. One had severe active gastroduodenitis and patchy colitis, and the other had complicated terminal ileitis, requiring ileocecal resection. Nonaka and colleagues[9] reported a 68-year-old male MIS-A patient whose intestine had extensive erosions from the duodenum to the ileum. The patient underwent arterial embolization and then small intestine resection because of hemorrhage. They also reported a 63-year-old man diagnosed with MIS-A with extensive erosion of the intestinal tract. A German medical team[10] reported a 27-year-old man diagnosed with MIS-A who had ileitis terminalis and colitis. Inflammation in the ileum and colon predominates in the gastrointestinal manifestations of MIS. However, upper gastrointestinal tract lesions demonstrated by imaging or endoscopic examination of MIS-A patients are rare, especially esophageal involvement. Here, we report a patient who had fever as the first symptom and subsequently developed esophageal ulcer. This case indicates that esophageal ulcer with

bleeding could also be a manifestation of MIS-A. Timely endoscopic examination is helpful for diagnosis and treatment. SARS-CoV-2 is implicated in the mechanism of MIS. The angiotensin-converting enzyme 2 receptor, which is used by SARS-CoV-2 to gain cell entry, is abundant in most organs[11]. The cytokine storm is also a potential driver of symptoms. Multiple cytokines including interleukin (IL)-1β, IL-6, IL-8, IL-10, IL-17, and interferon-γ are elevated in MIS-C patients [12]. MIS is also associated with thrombotic microangiopathy, which is characterized by microangiopathic hemolytic anemia and thrombocytopenia^[13]. Future studies should elucidate the multi-factorial pathogenesis of MIS-A in order to identify the markers for treatment and prevention.

CONCLUSION

Gastrointestinal involvement in MIS-A is not uncommon. Intestinal involvement predominates, and esophageal involvement is rarely reported. We report a case of MIS-A with fever, rash and multiple organ dysfunction accompanied by esophageal ulcer. After glucocorticoid therapy, fever and multiple organ dysfunction were relieved, and the esophageal ulcer healed. The patient's prognosis was good.

FOOTNOTES

Author contributions: Yang N, Li N, Liu Z, Jin T and Liu XJ managed the patient; Xin HW performed gastroscopy; Zhou HX performed bone marrow aspiration; Gu L and Zheng Y offered opinions on diagnosis and treatment; Yang N performed manuscript writing; Li N and Liu XJ revised this article; All authors contributed to the paper and approved the submitted version.

Informed consent statement: Informed consent was obtained from the patient.

Conflict-of-interest statement: All authors declare that they have no competing interests.

CARE Checklist (2016) statement: The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: https://creativecommons.org/Licenses/by-nc/4.0/

Country of origin: China

ORCID number: Zhen Liu 0000-0003-4941-1460; Tong Jin 0000-0002-8816-3925; Ning Li 0009-0005-1473-2805.

S-Editor: Liu JH L-Editor: A P-Editor: Zhao YQ

REFERENCES

- Das B, Joshi D, Vineeth VK, Naveen AS, Gopalakrishnan R, Ramasubramanian V, Yamuna Devi VR, Nambi PS. Post-COVID multisystem 1 inflammatory syndrome in adults: a study from a tertiary care hospital in south India. Indian J Med Res 2022; 156: 669-673 [PMID: 36926784 DOI: 10.4103/ijmr.ijmr_70_22]
- Serin I, Sari ND, Gunaltili M, Karakilic A, Gulesir B, Kal Kolik B, Cevik G, Sungurlu H, Keskin M, Baltik M, Cakmak O, Cinli TA. Enigma 2 of COVID-19: is "multisystem inflammatory syndrome in adults" (MIS-A) predictable? BMC Infect Dis 2022; 22: 300 [PMID: 35346086 DOI: 10.1186/s12879-022-07303-8
- Patel P, DeCuir J, Abrams J, Campbell AP, Godfred-Cato S, Belay ED. Clinical Characteristics of Multisystem Inflammatory Syndrome in 3 Adults: A Systematic Review. JAMA Netw Open 2021; 4: e2126456 [PMID: 34550381 DOI: 10.1001/jamanetworkopen.2021.26456]
- Su Y, Xing H, Shen W, Li M, Xu Y, Li Y. Fatal multisystem inflammatory syndrome in a 78-year-old adult after severe COVID-19 pneumonia 4 during 2022 Omicron variant epidemic in Shanghai, China. J Infect Public Health 2023; 16: 418-421 [PMID: 36731244 DOI: 10.1016/j.jiph.2023.01.003]
- 5 Chow EJ. The Multisystem Inflammatory Syndrome in Adults With SARS-CoV-2 Infection-Another Piece of an Expanding Puzzle. JAMA Netw Open 2021; 4: e2110344 [PMID: 34009354 DOI: 10.1001/jamanetworkopen.2021.10344]
- Kunal S, Ish P, Sakthivel P, Malhotra N, Gupta K. The emerging threat of multisystem inflammatory syndrome in adults (MIS-A) in COVID-6 19: A systematic review. Heart Lung 2022; 54: 7-18 [PMID: 35306376 DOI: 10.1016/j.hrtlng.2022.03.007]
- 7 Sweeny KF, Zhang YJ, Crume B, Martz CA, Blessing MM, Kahn SA. Inflammatory Bowel Disease Presenting With Concurrent COVID-19 Multisystem Inflammatory Syndrome. Pediatrics 2021; 147 [PMID: 33414238 DOI: 10.1542/peds.2020-027763]
- 8 Tong CW, Jiwane A. A complicated case of terminal ileitis post-COVID-19 infection requiring bowel resection. J Surg Case Rep 2022; 2022: rjac457 [PMID: 36348639 DOI: 10.1093/jscr/rjac457]
- 0 Nonaka T, Bunya N, Nakayama R, Hagiwara S, Uemura S, Harada K, Narimatsu E. Two cases of multisystem inflammatory syndrome in



adults after improvement in severe acute respiratory distress syndrome due to coronavirus disease 2019. Acute Med Surg 2022; 9: e737 [PMID: 35223045 DOI: 10.1002/ams2.737]

- 10 Rieper K, Sturm A. [First Cases of Multisystem Inflammatory Syndrome following SARS-CoV-2 infection in Adults in Germany]. Dtsch Med Wochenschr 2021; 146: 598-602 [PMID: 33706390 DOI: 10.1055/a-1404-6763]
- Maltezou HC, Pavli A, Tsakris A. Post-COVID Syndrome: An Insight on Its Pathogenesis. Vaccines (Basel) 2021; 9 [PMID: 34066007 DOI: 11 10.3390/vaccines9050497]
- Carter MJ, Fish M, Jennings A, Doores KJ, Wellman P, Seow J, Acors S, Graham C, Timms E, Kenny J, Neil S, Malim MH, Tibby SM, 12 Shankar-Hari M. Peripheral immunophenotypes in children with multisystem inflammatory syndrome associated with SARS-CoV-2 infection. Nat Med 2020; 26: 1701-1707 [PMID: 32812012 DOI: 10.1038/s41591-020-1054-6]
- 13 Campbell CM, Kahwash R. Will Complement Inhibition Be the New Target in Treating COVID-19-Related Systemic Thrombosis? Circulation 2020; 141: 1739-1741 [PMID: 32271624 DOI: 10.1161/CIRCULATIONAHA.120.047419]





Published by Baishideng Publishing Group Inc 7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA Telephone: +1-925-3991568 E-mail: office@baishideng.com Help Desk: https://www.f6publishing.com/helpdesk https://www.wjgnet.com

