## Contents
Thrice Monthly Volume 9 Number 33 November 26, 2021

### REVIEW
10052  Effects of alcohol consumption on viral hepatitis B and C  
   Xu HQ, Wang CG, Zhou Q, Gao YH

### MINIREVIEWS
10064  Effects of anti-diabetic drugs on sarcopenia: Best treatment options for elderly patients with type 2 diabetes mellitus and sarcopenia  
   Ma XY, Chen FQ

### ORIGINAL ARTICLE
10075  Utility of cooling patches to prevent hand-foot syndrome caused by pegylated liposomal doxorubicin in breast cancer patients  
   Zheng YF, Fu X, Wang XX, Sun XJ, He XD

10088  Clinicopathological features of small T1 colorectal cancers  

10098  Comparison of dental pulp periodontal therapy and conventional simple periodontal therapy as treatment modalities for severe periodontitis  
   Li L, Chen HJ, Lian Y, Wang T

10106  Tripartite intensive intervention for prevention of rebleeding in elderly patients with hypertensive cerebral hemorrhage  
   Li CX, Li L, Zhang JF, Zhang QH, Jin XH, Cai GJ

10116  Clinical and electroencephalogram characteristics and treatment outcomes in children with benign epilepsy and centrotemporal spikes  
   Chen RH, Li BF, Wen JH, Zhong CL, Ji MM

10126  Endoscopic ultrasonography diagnosis of gastric glomus tumors  
   Bai B, Mao CS, Li Z, Kuang SL

10134  Learning curves of robot-assisted pedicle screw fixations based on the cumulative sum test  
   Yu J, Zhang Q, Fan MX, Han XG, Liu B, Tian W

10143  Value of GRACE and SYNTAX scores for predicting the prognosis of patients with non-ST elevation acute coronary syndrome  
   Wang XF, Zhao M, Liu F, Sun GR
## Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10151</td>
<td>Effectiveness of enhanced recovery after surgery in the perioperative management of patients with bone surgery in China</td>
<td>Zhao LY, Liu XT, Zhao ZL, Gu R, Ni XM, Deng R, Li XY, Gao MJ, Zhu WN</td>
</tr>
<tr>
<td>10161</td>
<td>Association between plasma dipeptidyl peptidase-4 levels and cognitive function in perinatal pregnant women with gestational diabetes mellitus</td>
<td>Sana SRGL, Li EY, Deng XJ, Guo L</td>
</tr>
<tr>
<td>10172</td>
<td>Paricalcitol in hemodialysis patients with secondary hyperparathyroidism and its potential benefits</td>
<td>Chen X, Zhao F, Pan WJ, Di JM, Xie WN, Yuan L, Liu Z</td>
</tr>
<tr>
<td>10189</td>
<td>Effect of nursing intervention based on Maslow's hierarchy of needs in patients with coronary heart disease surgical intervention</td>
<td>Xu JX, Wu LX, Jiang W, Fan GH</td>
</tr>
<tr>
<td>10222</td>
<td>Prognostic value of ground glass opacity on computed tomography in pathological stage I pulmonary adenocarcinoma: A meta-analysis</td>
<td>Pan XL, Liao ZL, Yao H, Yan WJ, Wen DY, Wang Y, Li ZL</td>
</tr>
<tr>
<td>10238</td>
<td>Streptococcal toxic shock syndrome after hemorrhoidectomy: A case report</td>
<td>Lee CY, Lee YJ, Chen CC, Kuo LJ</td>
</tr>
<tr>
<td>10244</td>
<td>Subsequent placenta accreta after previous mifepristone-induced abortion: A case report</td>
<td>Zhao P, Zhao Y, He J, Bai XX, Chen J</td>
</tr>
</tbody>
</table>
Contents

10249  Autosomal dominant tubulointerstitial kidney disease with a novel heterozygous missense mutation in the uromodulin gene: A case report

10257  Novel KDM6A mutation in a Chinese infant with Kabuki syndrome: A case report
Guo HX, Li BW, Hu M, Si SY, Feng K

10265  Pancreatic cancer with synchronous liver and colon metastases: A case report
Dong YM, Sun HN, Sun DC, Deng MH, Peng YG, Zhu YY

10273  Veno-venous-extracorporeal membrane oxygenation treatment for severe capillary leakage syndrome: A case report
Nong WX, Lv QJ, Lu YS

10279  Anticoagulant treatment for pulmonary embolism in patient with cerebral hemorrhage secondary to mechanical thrombectomy: A case report
Chen XT, Zhang Q, Zhou CQ, Han YF, Cao QQ

10286  Complete restoration of congenital conductive hearing loss by staged surgery: A case report
Yoo JS, Lee CM, Yang YN, Lee EJ

10293  Blastic plasmacytoid dendritic cell neoplasm with skin and bone marrow involvement: Report of three cases

10300  Extracranial multiorgan metastasis from primary glioblastoma: A case report
Luan XZ, Wang HR, Xiang W, Li SJ, He H, Chen LG, Wang JM, Zhou J

10308  Transverse myelitis after infection with varicella zoster virus in patient with normal immunity: A case report
Yun D, Cho SY, Ju W, Seo EH

10315  Duodenal ulcer caused by coil wiggle after digital subtraction angiography-guided embolization: A case report
Xu S, Yang SX, Xue ZX, Xu CL, Cai ZZ, Xu CZ

10323  Crab lice infestation in unilateral eyelashes and adjacent eyelids: A case report
Tang W, Li QQ

10328  Local random flaps for cervical circumferential defect or tracheoesophageal fistula reconstruction after failed gastric pull-up: Two case reports

10337  Incurable and refractory spinal cystic echinococcosis: A case report
Zhang T, Ma LH, Liu H, Li SK

10345  Individualized treatment of breast cancer with chronic renal failure: A case report and review of literature
Cai JH, Zheng JH, Lin XQ, Lin WX, Zou J, Chen YK, Li ZY, Chen YX
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10355</td>
<td>Persistent fibrinogen deficiency after snake bite: A case report</td>
<td>Xu MH, Li J, Han L, Chen C</td>
</tr>
<tr>
<td>10362</td>
<td>Successful prolonged cardiopulmonary resuscitation after intraoperative cardiac arrest due to povidone-iodine allergy: A case report</td>
<td>Xiang BB, Yao YT, Jiao SL</td>
</tr>
<tr>
<td>10374</td>
<td>Carbon ion radiotherapy for synchronous choroidal melanoma and lung cancer: A case report</td>
<td>Zhang YS, Hu TC, Ye YC, Han JH, Li XJ, Zhang YH, Chen WZ, Chai HY, Pan X, Wang X, Yang YL</td>
</tr>
</tbody>
</table>
ABOUT COVER
Editorial Board Member of World Journal of Clinical Cases, Jian-Wu Zhao, PhD, Chief Physician, Professor, Department of Orthopedics, Jilin University Second Hospital, Changchun 130000, Jilin Province, China. jianwu@jlu.edu.cn

AIMS AND SCOPE
The primary aim of World Journal of Clinical Cases (WJCC, World J Clin Cases) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.
WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING
The WJCC is now indexed in Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports/Science Edition, Scopus, PubMed, and PubMed Central. The 2021 Edition of Journal Citation Reports® cites the 2020 impact factor (IF) for WJCC as 1.337; IF without journal self cites: 1.301; 5-year IF: 1.742; Journal Citation Indicator: 0.33; Ranking: 119 among 169 journals in medicine, general and internal; and Quartile category: Q3. The WJCC's CiteScore for 2020 is 0.8 and Scopus CiteScore rank 2020: General Medicine is 493/793.

RESPONSIBLE EDITORS FOR THIS ISSUE
Production Editor: Ji-Hong Liu; Production Department Director: Xiang Li; Editorial Office Director: Jin-Lei Wang.

NAME OF JOURNAL
World Journal of Clinical Cases

ISSN
ISSN 2307-8960 (online)

LAUNCH DATE
April 16, 2013

FREQUENCY
Thrice Monthly

EDITORS-IN-CHIEF
Dennis A Bloomfield, Sandro Vento, Bao-Gan Peng

EDITORIAL BOARD MEMBERS
https://www.wjgnet.com/2307-8960/editorialboard.htm

PUBLICATION DATE
November 26, 2021

COPYRIGHT
© 2021 Baishideng Publishing Group Inc

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
Streptococcal toxic shock syndrome after hemorrhoidectomy: A case report

Chien-Yu Lee, Yuarn-Jang Lee, Chia-Che Chen, Li-Jen Kuo

ORCID number: Chien-Yu Lee 0000-0001-9697-4608; Yuarn-Jang Lee 0000-0002-1255-1331; Chia-Che Chen 0000-0001-5646-3803; Li-Jen Kuo 0000-0002-4865-325X.

Author contributions: Lee CY wrote the manuscript; Lee YJ and Chen CC participated in patient care; Chen CC collected the data; Kuo LJ reviewed and edited the manuscript.

Informed consent statement: Informed written consent was obtained from the patient for publication of this report and any accompanying images.

Conflict-of-interest statement: The authors declare that they have no conflict of interest.

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).

Country/Territory of origin: Taiwan
Specialty type: Surgery
Provenance and peer review: Unsolicited article; Externally peer reviewed.

Abstract

BACKGROUND
Streptococcal toxic-shock syndrome after hemorrhoidectomy is rare but may be catastrophic. Group A streptococci have produced various surface proteins and exotoxins due to genetic changes to fight the human body’s immune response. Though life threatening infection after hemorrhoidectomy rarely occurs, all surgeons should be aware of the potential complications of severe sepsis after hemorrhoidectomy and keep in mind their clinical presenting features in order to diagnose early and administer appropriate and effective therapeutic drugs early.

CASE SUMMARY
Here, we present a case of a 56-year-old man with a painful thrombotic external hemorrhoid who presented to our outpatient department for management. There was no history of systemic diseases or recent disease infection. Hemorrhoidectomy was suggested and performed. After surgery, the patient developed hypotension, tachycardia, fever with chills and renal function impairment on day 2 post-operation. The clinical condition progressed to severe septic shock and metabolic acidosis. The patient responded poorly to treatment and expired after 1 d even with use of extracorporeal membrane oxygenation. The results of the blood and wound cultures showed group A streptococcus pyogenes.
CONCLUSION
Although extremely uncommon, all surgeons should be aware of these potential life-threatening septic complications and alert to the presenting features for patients receiving hemorrhoidectomy.

Key Words: Hemorrhoid; Sepsis; Streptococcus pyogenes; Streptococcal toxic shock syndrome; Case report

INTRODUCTION
Streptococcal toxic shock syndrome (STSS) occurs as a serious complication of invasive group A streptococcus (GAS) and 30%-70% of patients die in spite of aggressive treatments[1-3]. The criteria to define STSS include the isolation of GAS from a normally sterile site, hypotension, and involvement of at least two organ systems (renal impairment, coagulopathy, abnormal liver function, acute respiratory distress syndrome, skin rash, or soft tissue necrosis)[4]. Though GAS infection and STSS rarely happen after hemorrhoid treatment, all surgeons should be aware of the potential complications of severe sepsis after hemorrhoidectomy and keep in mind their clinical presenting features in order to diagnose early and administer appropriate and effective therapeutic drugs early.

CASE PRESENTATION
Chief complaints
The 56-year-old man was seen in our outpatient department because of sudden onset severe anal pain.

History of present illness
The patient had a history of external hemorrhoids for 20 years and denied any systemic diseases. This time, he visited our outpatient department because of sudden onset severe anal pain and bleeding.

History of past illness
The patient had a free previous medical history.

Personal and family history
No significant personal or family history was identified.
Physical examination
Rectal examination showed a thrombosed external protruding hemorrhoid and surgery was suggested because of acute pain. Preoperative blood pressure was 108/96 mmHg, the pulse was 59 beats per minute, the oxygen saturation was 100% under ambient air at rest and other examination results were normal.

Laboratory examinations
Routine laboratory examinations were within normal limits.

Imaging examinations
Routine chest X-ray examination was normal.

FINAL DIAGNOSIS
Acute thrombotic hemorrhoids with bleeding and severe anal pain.

TREATMENT
The patient received hemorrhoidectomy immediately after his outpatient department visit.

OUTCOME AND FOLLOW-UP
The patient received hemorrhoidectomy immediately after his outpatient department visit. Hemorrhoidectomy was performed smoothly. After the operation, the patient was sent back to the ward of general surgery and vital signs were similar to those from preoperative examination. On the morning of day 1 post-operation, his temperature was 36.4 °C, blood pressure was 85/50 mmHg, and pulse was 83 beats per minute. On examination, the patient had good spirits and fair activity without any discomfort except for moderate wound pain (VAS = 5). The wound showed mild swelling and no pus or bloody discharge. Mefenamic acid 250mg QID PO and Pethidine 50mg PRN were prescribed for pain relief. Increased pulse rates to 108 beats per minute and persistent hypotension (76/54 mmHg) were noted on day 2 post-operation. The patient appeared well and denied having dizziness, chills, weakness, poor appetite or low urine output. Sepsis, stress ulcer induced gastrointestinal bleeding and dehydration were first considered but the patient denied tarry stool and epigastric discomfort. Due to the hypotension, we planned to give intravenous fluid, but the patient refused to establish an intravenous line because of fear of pain; thus, water intake was encouraged and vital signs were closely monitored. On the morning of day 3 post-operation, the patient had fever to 38.6 °C with mention of chills. His blood pressure was 70/42 mmHg, his pulse was 124 beats per minute, and his oxygen saturation was 97% under ambient air. Two sets of blood cultures and laboratory tests were immediately obtained. The laboratory result revealed leukocytosis (white blood cell, 13100/µL), elevated C-reactive protein (33.12 mg/dL), blood urea nitrogen (40.6 mg/dL), creatinine (2.6 mg/dL) and decreased platelets (81000/µL). Intravenous fluid and antibiotics (Cefmetazole, 1g, Q8H) were given due to suspected sepsis. We rechecked vital signs after 2 h, and found his blood pressure was 155/110 mmHg, his pulse was 88 beats per minute, and his oxygen saturation was 95% under ambient air. The patient started to complain of general soreness and discomfort. After 6 h, the patient underwent a consciousness change, as noted by his family. On examination, we found a body temperature of 36.1 °C, blood pressure of 68/51 mmHg, pulse of 144 beats per minute, respiratory rate of 27 per minute and oxygen saturation of 95% under ambient air. Immediate intravenous fluid resuscitation was performed and artery blood gas analysis revealed pH 7.32, pCO₂ 16.9 mmHg, pO₂ 118.9 mmHg, and HCO₃⁻ 8.5 mmol/L. The patient was sent to the intensive care unit and an endotracheal tube was put in place because of low oxygen saturation and tachypnea. Sodium bicarbonate was given and due to persistent metabolic acidosis, continuous venous-venous hemofiltration was arranged. Sudden cardiac arrest happened after continuous venous-venous hemofiltration. Cardiopulmonary resuscitation was performed and emergent extracorporeal membrane oxygenation (ECMO) was applied to sustain
circulation and tissue perfusion. Although there was neither significant swelling nor pus discharge of the anal wound, a swab culture from the deep wound was obtained. The patient experienced cardiac arrest again 2 h after ECMO placement and expired. The blood and wounds culture both yielded *Streptococcus pyogenes*.

**DISCUSSION**

Hemorrhoids are a common disease with the prevalence of 4.4%-11% throughout the population[5,6]. Hemorrhoidectomy is an efficient and advantageous way to cure hemorrhoids, especially when patients fail to respond to conservative measures[7]. The postoperative complications of hemorrhoidectomy include fecal impaction, infection, urinary retention, bleeding and anus stenosis. The overall postoperative complications rate is approximately 3% and septic complication following treatment of hemorrhoids is rare[8-10]. The predominant organisms isolated in those patients with septic complications are *Escherichia coli* and *Bacteroides*[9,10]. Only one study to date has reported *Streptococcus pyogenes* induced necrotizing fasciitis and toxic shock syndrome after hemorrhoidectomy similar to the case we presented[11].

Group A *Streptococcus* (GAS; *Streptococcus pyogenes*) causes a broad spectrum of infections, including skin and soft tissue infections, tonsillitis, postpartum endometritis, puerperal sepsis, necrotizing soft tissue infection, and toxic shock syndrome (TSS)[12]. Invasive group A streptococcal (invasive GAS) disease is relatively rare but is often complicated by shock and multiorgan failure and is associated with high mortality and morbidity[1-3]. The incidence of invasive GAS diseases is high in adults > 50 years of age and young children and most patients are not immunocompromised[2,3,13]. Streptococcal TSS (STSS) occurs as a serious complication of invasive GAS disease in approximately one-third of cases and 30% to 70% of patients die in spite of aggressive treatments[14,15]. The criteria to define STSS includes the isolation of GAS from a normally sterile site, hypotension, and involvement of at least two organ systems (renal impairment, coagulopathy, abnormal liver function, acute respiratory distress syndrome, skin rash, or soft tissue necrosis) (Table 1)[4]. Our patient fulfilled the diagnostic criteria of confirmed STSS, without the presentation of necrotizing fasciitis. The pathogenic mechanisms of STSS are not completely understood because each is the culmination of complex interactions between the defense abilities of the human host and specific virulence factors of GAS[16]. Streptococcal pyrogenic exotoxins and other proteins act as superantigens and trigger excessive T cell response and secretion of massive inflammatory cytokines producing capillary leakage and arterial hypotension[17]. Predisposing factors for invasive GAS are minor trauma, including injuries resulting in hematoma, bruising, muscle strain, recent surgery, viral infection (e.g., influenza, varicella, etc.), alcohol abuse, immunosuppression, chronic lung disease, intravenous drug use, heart disease, diabetes, cancer, and recent child birth[18]. Risk factors identified in our patient included thrombosed hemorrhoid, recent surgery (hemorrhoidectomy) and age > 50 years.

Bacteria do colonize anal wounds following open hemorrhoidectomy[19]. *E. coli*, followed by *Staphylococcus aureus* and *Staphylococcus epidermidis* are the most dominant organisms[19]. However, overt wound infection after routine hemorrhoid surgery is rare (1.4%) and routine prophylactic antibiotic use is unnecessary[20,21]. In thrombosed hemorrhoid and septic complications after hemorrhoid treatment, *E. coli* and anaerobes are the predominant pathogens[10,11,22]. In our patient, a thrombosed hemorrhoid and open hemorrhoidectomy provided a portal of entry for GAS. This could explain local or indeed distant sepsis.

The systemic review of McCloud et al[9] reported 38 patients with life threatening sepsis following treatment for hemorrhoids. Of these, all were well prior to surgery with the exception of two (one was a case of human immunodeficiency virus infection and the other had drug-induced agranulocytosis). The predominant organisms isolated in these patients were *Escherichia coli*, *Bacteroides fragilis*, and *Staphylococcus aureus*. Only one study to date reported *Streptococcus pyogenes* induced STSS after hemorrhoidectomy[11], similar to the case presented here. In the literature reviewed by McCloud et al[9], 10 patients died and seven of them had initial presentations of septic shock; conversely, only 2 of the 28 survival cases developed septic shock at initial presentation. In our case, the most important presentation was septic shock without local wound necrosis. The fierce progression of GAS infection related to TSS calls for early aggressive intervention due to the high mortality and morbidity rate[14,15].
Lee CY et al. STSS after hemorrhoidectomy

**Table 1 Clinical criteria for streptococcal toxic-shock syndrome**

| Hypotension defined by a systolic blood pressure less than or equal to 90 mmHg for adults or less than the fifth percentile by age for children aged less than 16 years |
| Multiple organ involvement characterized by two or more of the following: |
| Renal impairment: creatinine ≥ 2 mg/dL (≥ 177 μmol/L) for adults or ≥ twice the upper limit of normal for age. In patients with preexisting renal disease, > twofold elevation baseline creatinine levels |
| Coagulopathy: platelets ≤ 100,000/mm$^3$ (≤ 100 × 10$^12$/L) and/or disseminated intravascular coagulation, defined by prolonged clotting times, low fibrinogen level, and the presence of fibrin degradation products |
| Liver abnormalities: alanine aminotransferase, aspartate aminotransferase, or total bilirubin levels ≥ twice the upper limit of normal for the patient’s age. In patients with preexisting liver disease, a > twofold increase over baseline levels |
| Acute respiratory distress syndrome: defined by acute onset of diffuse pulmonary infiltrates and hypoxemia in the absence of cardiac failure or by evidence of diffuse capillary leak manifested by cute onset of generalized edema, or pleural or peritoneal effusions with hypoalbuminemia |
| Hypotension defined by a systolic blood pressure less than or equal to 90 mmHg for adults or less than the fifth percentile by age for children aged less than 16 years |
| Multiple organ involvement characterized by two or more of the following: |
| Renal impairment: creatinine ≥ 2 mg/dL (≥ 177 μmol/L) for adults or ≥ twice the upper limit of normal for age. In patients with preexisting renal disease, > twofold elevation baseline creatinine levels |
| Coagulopathy: platelets ≤ 100,000/mm$^3$ (≤ 100 × 10$^12$/L) and/or disseminated intravascular coagulation, defined by prolonged clotting times, low fibrinogen level, and the presence of fibrin degradation products |
| Liver abnormalities: alanine aminotransferase, aspartate aminotransferase, or total bilirubin levels ≥ twice the upper limit of normal for the patient’s age. In patients with preexisting liver disease, a > twofold increase over baseline levels |
| Acute respiratory distress syndrome: defined by acute onset of diffuse pulmonary infiltrates and hypoxemia in the absence of cardiac failure or by evidence of diffuse capillary leak manifested by cute onset of generalized edema, or pleural or peritoneal effusions with hypoalbuminemia |
| A generalized erythematous macular rash that may desquamate |
| Soft tissue necrosis, including necrotizing fasciitis or myositis, or gangrene |
| Laboratory criteria for diagnosis: |
| Isolation of group A streptococcus |

**CONCLUSION**

Though GAS infection and STSS rarely happen after hemorrhoid treatment, catastrophic complications indeed do occur. All surgeons should be aware of the potential complications of severe sepsis after hemorrhoidectomy. The GAS infection following hemorrhoidectomy should be considered even when there is little to find on examination and the presenting features of STSS should be kept in mind.

**REFERENCES**


12. **Waddington CS**, Snelling TL, Carapetis JR. Management of invasive group A streptococcal
Lee CY et al. STSS after hemorrhoidectomy


