## Contents

**World Journal of Clinical Cases**

Semimonthly Volume 8 Number 21 November 6, 2020

### REVIEW

**5070** Strategies and challenges in the treatment of chronic venous leg ulcers


**5086** Peripheral nerve tumors of the hand: Clinical features, diagnosis, and treatment

*Zhou HY, Jiang S, Ma FX, Lu H*

### MINIREVIEWS

**5099** Treatment strategies for gastric cancer during the COVID-19 pandemic

*Kang WZ, Zhong YX, Ma FH, Liu H, Ma S, Li Y, Hu HT, Li WK, Tian YT*

### ORIGINAL ARTICLE

#### Retrospective Cohort Study

**5104** Oncological impact of different distal ureter managements during radical nephroureterectomy for primary upper urinary tract urothelial carcinoma


**5116** Clinical characteristics and survival of patients with normal-sized ovarian carcinoma syndrome: Retrospective analysis of a single institution 10-year experiment

*Yu N, Li X, Yang B, Chen J, Wu MF, Wei JC, Li KZ*

#### Retrospective Study

**5128** Assessment of load-sharing thoracolumbar injury: A modified scoring system

*Su QH, Li YC, Zhang Y, Tan J, Cheng B*

**5139** Accuracy of endoscopic ultrasound-guided needle aspiration specimens for molecular diagnosis of non-small-cell lung carcinoma

*Su W, Tian XD, Liu P, Zhou DJ, Cao FL*

**5149** Application of hybrid operating rooms for clipping large or giant intracranial carotid-ophthalmic aneurysms

*Zhang N, Xin WQ*

**5159** Magnetic resonance imaging findings of carcinoma arising from anal fistula: A retrospective study in a single institution

*Zhu X, Zhu TS, Ye DD, Liu SW*

**5172** Efficacy and safety of S-1 maintenance therapy in advanced non-small-cell lung cancer patients

*Cheng XW, Leng WH, Ma CL*
Contents

Semimonthly Volume 8 Number 21 November 6, 2020

5180 Analysis of 234 cases of colorectal polyps treated by endoscopic mucosal resection
Yu L, Li N, Zhang XM, Wang T, Chen W

5188 Epidemiological and clinical characteristics of fifty-six cases of COVID-19 in Liaoning Province, China

5203 Radiomics model for distinguishing tuberculosis and lung cancer on computed tomography scans

5213 Influence of transitional nursing on the compliance behavior and disease knowledge of children with purpura nephritis
Li L, Huang L, Zhang N, Guo CM, Hu YQ

Randomized Controlled Trial

5221 Wavelet and pain rating index for inhalation anesthesia: A randomized controlled trial
Zhang JW, Lv ZG, Kong Y, Han CF, Wang BG

SYSTEMATIC REVIEWS

5235 Essential phospholipids for nonalcoholic fatty liver disease associated with metabolic syndrome: A systematic review and network meta-analysis
Dajani AI, Popovic B

5250 Cardiovascular impact of COVID-19 with a focus on children: A systematic review
Rodriguez-Gonzalez M, Castellano-Martinez A, Cascales-Poyatos HM, Perez-Reviron AA

5284 Anterior bone loss after cervical disc replacement: A systematic review
Wang XF, Meng Y, Liu H, Hong Y, Wang BY

CASE REPORT

5296 Submicroscopic 11p13 deletion including the elongator acetyltransferase complex subunit 4 gene in a girl with language failure, intellectual disability and congenital malformations: A case report
Toral-Lopez J, González Huerta LM, Messina-Baas O, Cuevas-Covarrubias SA

5304 Pancreatic panniculitis and elevated serum lipase in metastasized acinar cell carcinoma of the pancreas: A case report and review of literature
Miksch RC, Schiergens TS, Weniger M, Ilmer M, Kazmierczak PM, Guba MO, Angele MK, Werner J, D'Haese JG

5313 Diffusion-weighted imaging might be useful for reactive lymphoid hyperplasia diagnosis of the liver: A case report
Tanaka T, Saito K, Yunaiyama D, Matsubayashi J, Nagakawa Y, Tanigawa M, Nagao T

5320 Nafamostat mesylate-induced hyperkalemia in critically ill patients with COVID-19: Four case reports
Okajima M, Takahashi Y, Kaji T, Ogawa N, Mouri H
Arthroscopic treatment of iliopsoas tendinitis after total hip arthroplasty with acetabular cup malposition: Two case reports
Won H, Kim KH, Jung JW, Kim SY, Baek SH

Successful treatment of a high-risk nonseminomatous germ cell tumor using etoposide, methotrexate, actinomycin D, cyclophosphamide, and vincristine: A case report
Yun J, Lee SW, Lim SH, Kim SH, Kim CK, Park SK

Donepezil-related inadequate neuromuscular blockade during laparoscopic surgery: A case report
Jang EA, Kim TY, Jung EG, Jeong S, Bae HB, Lee S

Successful treatment of relapsed acute promyelocytic leukemia with arsenic trioxide in a hemodialysis-dependent patient: A case report
Lee HJ, Park SG

Treatment of afferent loop syndrome using fluoroscopic-guided nasointestinal tube placement: Two case reports
Hu HT, Ma FH, Wu ZM, Qi XH, Zhong YX, Xie YB, Tian YT

Emergency surgical workflow and experience of suspected cases of COVID-19: A case report
Wu D, Xie TY, Sun XH, Wang XX

Seven-year follow-up of the nonsurgical expansion of maxillary and mandibular arches in a young adult: A case report
Yu TT, Li J, Liu DW

Pancreatic cancer with ovarian metastases: A case report and review of the literature
Wang SD, Zhu L, Wu HW, Dai MH, Zhao YP

Early ultrasound diagnosis of conjoined twins at eight weeks of pregnancy: A case report
Liang XW, Cai YY, Yang YZ, Chen ZY

Supermicroscopy and arterio-venolization for digit replantation in young children after traumatic amputation: Two case reports
Chen Y, Wang ZM, Yao JH

Candidal periprosthetic joint infection after primary total knee arthroplasty combined with ipsilateral intertrochanteric fracture: A case report
Xin J, Guo QS, Zhang HY, Zhang ZY, Talmy T, Han YZ, Xie Y, Zhong Q, Zhou SR, Li Y

Aspiration pneumonia during general anesthesia induction after esophagectomy: A case report
Tang JX, Wang L, Nian WQ, Tang WY, Xiao YJ, Tang XX, Liu HL

Large and unusual presentation of gallbladder adenoma: A case report
Cao LL, Shan H

Rare narrow QRS tachycardia with atrioventricular dissociation: A case report
Zhu C, Chen MX, Zhou GJ
## Contents

**World Journal of Clinical Cases**

**Semimonthly Volume 8 Number 21 November 6, 2020**

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5426</td>
<td>Synchronous parathyroid adenoma, papillary thyroid carcinoma and thyroid adenoma in pregnancy: A case report</td>
<td>Li Q, Xu XZ, Shi JH</td>
</tr>
<tr>
<td>5432</td>
<td>Pseudohyperkalemia caused by essential thrombocytemia in a patient with chronic renal failure: A case report</td>
<td>Guo Y, Li HC</td>
</tr>
<tr>
<td>5439</td>
<td>Acute leukemic phase of anaplastic lymphoma kinase-anaplastic large cell lymphoma: A case report and review of the literature</td>
<td>Zhang HF, Guo Y</td>
</tr>
<tr>
<td>5446</td>
<td>Chinese patient with cerebrotendinous xanthomatosis confirmed by genetic testing: A case report and literature review</td>
<td>Cao LX, Yang M, Liu Y, Long WY, Zhao GH</td>
</tr>
<tr>
<td>5467</td>
<td>Fanconi-Bickel syndrome in an infant with cytomegalovirus infection: A case report and review of the literature</td>
<td>Xiong LJ, Jiang ML, Du LN, Yuan L, Xie XL</td>
</tr>
<tr>
<td>5474</td>
<td>Benign symmetric lipomatosis (Madelung’s disease) with concomitant incarcerated femoral hernia: A case report</td>
<td>Li B, Rang ZX, Weng JC, Xiong GZ, Dai XP</td>
</tr>
<tr>
<td>5480</td>
<td>Potential protection of indocyanine green on parathyroid gland function during near-infrared laparoscopic-assisted thyroidectomy: A case report and literature review</td>
<td>Peng SJ, Yang P, Dong YM, Yang L, Yang ZY, Hu XE, Rao GQ</td>
</tr>
</tbody>
</table>

**CORRECTION**

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
</table>
ABOUT COVER
Peer-reviewer for World Journal of Clinical Cases, Dr. Karayiannakis is Professor of Surgery at the Medical School of Democritus University of Thrace. He received his MD from the Medical Academy, Sofia, Bulgaria (1985), an MSc in Surgical Science from University of London (1996), and a PhD from National and Kapodistrian University of Athens (NKUA) (1993). After completing training at the NKUA Medical School in 1993, Dr. Karayiannakis undertook postgraduate training at St George’s and Hammersmith Hospitals (London), the Institute for Digestive Diseases (Serbia), the University of Verona (Italy), and the Technical University of Munich (Germany). His clinical practice interests and research emphasis are in the field of hepato-pancreato-biliary diseases and gastrointestinal tract surgery, surgical oncology and laparoscopic surgery. (L-Editor: Filipodia)

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, PubMed, and PubMed Central. The 2020 Edition of Journal Citation Reports® cites the 2019 impact factor (IF) for WJCC as 1.013; IF without journal self cites: 0.991; Ranking: 120 among 165 journals in medicine, general and internal; and Quartile category: Q3.

RESPONSIBLE EDITORS FOR THIS ISSUE
Production Editor: Yan-Xia Xing; Production Department Director: Yan-Xiaojian Wu; 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
Semimonthly

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 6, 2020

COPYRIGHT
© 2020 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
Candidal periprosthetic joint infection after primary total knee arthroplasty combined with ipsilateral intertrochanteric fracture: A case report

Jun Xin, Qing-Shan Guo, Hua-Yu Zhang, Zhi-Yang Zhang, Tomer Talmy, Yu-Zhuo Han, Yu Xie, Qiu Zhong, Si-Ru Zhou, Yang Li

ORCID number: Jun Xin 0000-0001-9018-1447; Qing-Shan Guo 0000-0003-1195-956X; Hua-Yu Zhang 0000-0002-9360-4107; Zhi-Yang Zhang 0000-0002-7621-2304; Tomer Talmy 0000-0002-7440-8864; Yu-Zhuo Han 0000-0002-7495-7265; Yu Xie 0000-0001-9347-814X; Qiu Zhong 0000-0002-6584-0970; Si-Ru Zhou 0000-0003-3495-1413; Yang Li 0000-0003-2327-0444.

Author contributions: Xin J and Guo QS wrote the first draft of the paper and contributed equally to this paper; Guo QS, Li Y performed the surgeries; Zhong Q contributed to the microbiological investigation; Talmy T and Zhang HY contributed to revision of the manuscript, literature review and discussion; Xie Y, Zhang ZY and Zhou SR collected the patient’s radiographic data; Li Y designed the case report and revised the discussion; the final version was approved by all authors.

Supported by Clinical Technology Innovation Cultivation Program of Army Medical University of PLA, No. CX2019JS109; Independent Project of State Key Laboratory of Trauma, Burns and Combined Injuries, No. SKLZZ201603; and Chongqing Appropriate Technology Promotion Project No.

Abstract

BACKGROUND
Candidal periprosthetic joint infection is a rare and difficult to diagnose complication of total knee arthroplasty. The treatment of such complications is inconclusive and may include prosthesis removal, debridement, arthrodesis, and extensive antifungal therapy to control the infection.

CASE SUMMARY
A 62-year-old male with a history of total knee arthroplasty (TKA) in his left knee presented with ipsilateral knee pain and a sinus discharge 20 mo after TKA. The patient was previously evaluated for left knee pain, swelling, and a transient fever one month postoperatively. Prosthesis removal and insertion of a cement spacer were performed in a local hospital six months prior to the current presentation. Medical therapy included rifampicin and amphotericin which were administered for 4 wk following prosthesis removal. A second debridement was performed in our hospital and Candida parapsilosis was detected in the knee joint. Fourteen weeks following the latter debridement, the patient suffered a left intertrochanteric fracture and received closed reduction and internal fixation with proximal femoral nail anterotation. Two weeks after fracture surgery, a knee
INTRODUCTION

Periprosthetic joint infection (PJI) is one of the most serious complications of total knee arthroplasty (TKA)\(^1\). With the improvement of surgical techniques and conditions, the incidence of periprosthetic infection is decreasing. However, with the rapid increase in the total number of arthroplasties, the absolute number of PJI has also increased. Fungal PJIs are rarely reported, accounting for less than 1\% of all PJIs\(^2\). However, fungal infections may result in disastrous consequences for the patient. Many factors may increase the risk for fungal PJIs following arthroplasties, including impaired host immunity, malignant tumors, excessive or inappropriate use of antibiotics, and catheter retention (urinary or extra-intestinal hypertrophic tubes). Due to atypical early clinical signs and lack of specificity in laboratory examinations, the early diagnosis of fungal PJIs is difficult. In addition, due to the lack of high-level evidence, no standard management has been determined. Although a two-stage exchange arthroplasty is preferred by most surgeons\(^3\), controversies still exist with regard to the ideal interval between implant removal and reimplantation, the usefulness of antifungal-loaded cement spacers and the duration of systemic antifungal treatment. If other fractures occur in the interval between implant removal and reimplantation, the case would be more complicated.

Here, we report a case of candidal PJI following TKA combined with ipsilateral intertrochanteric fracture after the first stage of implant removal and cement spacer insertion.
CASE PRESENTATION

Chief complaints
A 62-year-old male presented with pain and a sinus effusion in the left replaced knee for 3 mo.

History of present illness
A TKA of the left knee was performed 20 mo prior to the current admission. One month postoperatively, the patient experienced pain and swelling of the left knee with transient fever. The patient was administered amoxicillin for one week by a local community clinic without abatement of the symptoms. Three months after the TKA, he was referred to the operating hospital where a knee aspiration was performed with no indicative findings. Radiography of the left replaced knee did not reveal any notable abnormalities (Figure 1). Gentamicin and vancomycin were given empirically without a clinically significant response. The knee was re-aspirated without any indicative findings. The patient was then discharged without a definitive diagnosis. Fourteen months after TKA, the patient experienced left knee pain with further exacerbation of joint swelling and an inability to walk. Thus, the hospital chose to remove the implant and insert an antibiotic-impregnated (vancomycin) acrylic bone cement spacer (Figure 2). Bacterial cultures were performed on the intraoperative excised tissue and the result remained negative. Rifampicin was administered for another four weeks post-operatively. Three months later, a draining sinus with effusion appeared on the left knee and the patient was referred to our hospital.

History of past illness
The patient had no history of cardiovascular disease, diabetes, immune deficiency, or long-term steroid use.

Physical examination
Upon examination, a drainage sinus tract with effusion was observed superomedial to the patellar tendon. The local temperature was slightly elevated, with a terminally restricted range of motion upon flexion and pain associated with both passive and active motion of the knee. The patient was neurologically intact and distal pulsations were well felt.

Laboratory examinations
Laboratory evaluation including complete blood count, procalcitonin, interleukin-6, erythrocyte sedimentation rate, and urine microscopy revealed no significant abnormalities besides an elevated C-reactive protein (31.1 mg/L). Knee joint aspiration was sent for analysis. Gram staining of the bacterial culture was negative, but fungal culture was positive for Candida parapsilosis (C. parapsilosis).

Imaging examinations
No abnormalities were found in the anteroposterior lateral radiographs of the knee after primary TKA.

FINAL DIAGNOSIS
Candidal periprosthetic joint infection after primary total knee arthroplasty.

TREATMENT
Considering the recurrent failure in obtaining a definitive diagnosis or clinically significant findings from cultured samples, we decided to perform an additional operation to replace the cement spacer. During the operation, necrotic tissue with a white cheesy appearance was observed on the surface of the spacer which had an unpleasant odor (Figure 3). The intraoperative specimen was sent for aerobic, anaerobic, acid-fast bacilli, and fungal cultures. After removal of the spacer, exhaustive debridement was performed. After the debridement, examination revealed mediolateral knee instability. Therefore, a cross-knee external fixator was applied to optimize stabilization, followed by the insertion of a new cement spacer (Figure 4).
Figure 1 Anteroposterior and lateral radiographs after primary total knee arthroplasty. The surgery was performed 20 mo prior to current presentation.

Figure 2 Radiograph of the patient's left knee after prosthesis removal and insertion of an antibiotic (vancomycin) impregnated cement spacer.

Figure 3 Cheesy like necrotic tissue was observed on the surface of the spacer which had an unpleasant odor during the second debridement procedure.

Fungal culture was positive for *C. parapsilosis* sensitive to voriconazole and itraconazole with bacterial cultures remaining negative. Post-operative medical therapy included intravenous voriconazole for 4 wk followed by oral itraconazole for 12 wk. Unfortunately, 14 wk postoperatively (2 wk before completion of the antifungal treatment course), the patient suffered a fall resulting in a left intertrochanteric fracture (AO classification: 31A2.2) (Figure 5). Upon examination of the left knee, we found that it was free of any sinuses or signs of surgical wound infection, with an intact range of motion. The patient’s C-reactive protein, procalcitonin, and erythrocyte sedimentation rate were all within the normal reference ranges. The patient underwent a closed reduction and internal fixation with proximal femoral nail anterotation for the fracture and was able to walk on crutches the following day (Figure 6). Two weeks
After the latter operation, no signs of infection were observed, and inflammatory markers all declined or were within the normal range. Considering the extensive soft-tissue defect around the knee joint, a knee arthrodesis with autograft was performed using a double-plate fixation (Figure 7). The patient recovered adequately and was subsequently discharged.

OUTCOME AND FOLLOW-UP

At the two-year follow-up, the patient is able to walk without crutches for more than 3 km with a pain-free fused knee. However, radiography shows significantly worsened contralateral knee degeneration (Figure 8).
Figure 7  Knee arthrodesis with autograft using a double-plate fixation.

Figure 8  Radiography at the two-year follow-up.

DISCUSSION

Fungal PJIs are rarely reported worldwide. Thus, evidence-based guidelines on the treatment of fungal PJIs have yet to be established\[4\]. The presence of a persistent fungal infection is thought to be a result of an often delayed diagnosis\[5,6\]. Several different treatment methods, including antifungal drugs, debridement with retained prosthesis, resection arthroplasty, one-stage or two-stage exchange arthroplasty and arthrodesis have been reported, with variable outcomes\[3,5\].

Currently, the trigger of fungal infection remains unclear. Patients who are immunocompromised, have an underlying systemic illness or have been subject to prolonged antibiotic regimens may have a higher risk of fungal infection. Prolonged wound drainage has also recently been identified as a potential risk factor\[7\]. The most likely cause of fungal infection in the reported case is the extensive use of antibiotics before identifying a definitive cause of the prosthetic joint infection.

In previous studies, Candida albicans was reported to be the most common pathogen in PJIs followed by C. parapsilosis\[8\]. Candidal PJI was reported in patients with preoperative cutaneous candidiasis\[9\]. However, No primary source of candidal infection was identified in our case. It should be noted that C. parapsilosis infections are characterized by the creation of highly resolute biofilms, making eradication of the mycotic infection a significant obstacle\[5,6\].

Fungal infections are characterized by a subtle onset of symptoms, and typical local and systemic signs of infection such as swelling, fever, erythema and pain are often absent. The progression of symptoms is often slow, usually manifesting weeks to years after arthroplasty\[10\]. In this case, the patient’s initial symptoms were not obvious and without systemic symptoms, further obscuring early diagnosis.

Fungal culture is not considered a routine test in many hospitals. Negative bacterial culture results of synovial fluid aspiration cannot exclude infection. For patients with potential risk factors such as long-term use of antibiotics, immunosuppressants, catheterization, and cutaneous fungal infections, one should expand beyond the spectrum of bacterial cultures to consider the possibility of a fungal etiology\[11\].

In the presented case, the fracture occurred during the late stage of the anti-fungal
course after the second debridement. The fracture was managed under the assumption that the fungal infection had resolved. After weighing the risks of the complication of the fracture and infection, we decided to fixate the fracture with minimally invasive surgery to avoid the complication of long-term immobilization.

Due to exhaustive debridement, a considerable amount of affected tissue was resected and mediolateral instability of the knee was present intraoperatively. Thus, reimplantation was unsuitable for this patient. Considering the high non-fusion rate, we used a double-plate fixation arthrodesis with autograft. Follow-up radiography showed successful fusion after one year.

The choice and the duration of antifungal therapy remains unclear. Amphotericin B and fluconazole are the most commonly used antifungal drugs, but their side effects are greater while voriconazole and itraconazole are less toxic\(^1\). Keuning et al.\(^1\) recently reported a case of *C. parapsilosis* PJI following revision of TKA, successfully treated with a combination of voriconazole and micafungin. The lack of evidence regarding the choice of antifungals warrants further research in order to optimize treatment protocols for mycotic PJI.

Another controversial issue is the duration of antifungal treatment. A long period of oral antifungal treatment has been recognized as being an essential factor for the success of staged reimplantation after a fungal peri-prosthetic joint infection. However, no evidence was found for the routine use of arthrodesis. Theoretically, arthrodesis is much safer than reimplantation. Therefore, a protocol of intravenous oral antifungal treatment has been recognized as being an essential factor for the success of staged reimplantation after a fungal peri-prosthetic joint infection.

In this case, the patient had another very painful knee with mediolateral instability. Moreover, the infection was located near the patellar tendon insertion. Therefore, it was decided to reimplant the knee. The patient did not experience recurrence of symptoms.

**CONCLUSION**

Fungal PJI following TKA can be successfully and safely treated by prosthesis removal, extensive debridement, and arthrodesis after effective antifungal therapy. Ipsilateral intertrochanteric fractures of the affected knee can be safely fixated using internal fixation if resolution of the existing fungal infection can be established via clinical and laboratory investigations.

**REFERENCES**


