## Contents

### OPINION REVIEW

**7620** Whipple’s operation with a modified centralization concept: A model in low-volume Caribbean centers  
*Cawich SO, Pearce NW, Naraynsingh V, Shukla P, Deshpande RR*

### REVIEW

**7631** Role of micronutrients in Alzheimer's disease: Review of available evidence  
*Fei HX, Qian CF, Wu XM, Wei YH, Huang JY, Wei LH*

### MINIREVIEWS

**7642** Application of imaging techniques in pancreaticobiliary maljunction  
*Wang JY, Mu PY, Xu YK, Bai YY, Shen DH*

**7653** Update on gut microbiota in gastrointestinal diseases  
*Nishida A, Nishino K, Ohno M, Sakai K, Owaki Y, Noda Y, Imaeda H*

**7665** Vascular complications of pancreatitis  
*Kalas MA, Leon M, Chavez LO, Canalizo E, Sarani S*

### ORIGINAL ARTICLE

**Clinical and Translational Research**

**7674** Network pharmacology and molecular docking reveal zedoary turmeric-trisomes in Inflammatory bowel disease with intestinal fibrosis  
*Zheng L, Ji YY, Dai YC, Wen XL, Wu SC*

**Case Control Study**

**7686** Comprehensive proteomic signature and identification of CDKN2A as a promising prognostic biomarker and therapeutic target of colorectal cancer  
*Wang QQ, Zhou YC, Zhou Ge YJ, Qin G, Yin TF, Zhao DY, Tan C, Yao SK*

**Retrospective Cohort Study**

**7698** Is anoplasty superior to scar revision surgery for post-hemorrhoidectomy anal stenosis? Six years of experience  
*Wang YT, Chu KJ, Lin KH, Chang CK, Kang JC, Chen CY, Hu JM, Pu TW*

**Retrospective Study**

**7708** Short- (30-90 days) and mid-term (1-3 years) outcomes and prognostic factors of patients with esophageal cancer undergoing surgical treatments  
*Shi MK, Mei YQ, Shi JL*
**Contents**

**Effectiveness of pulsed radiofrequency on the medial cervical branches for cervical facet joint pain**
Chang MC, Yang S

**Clinical performance evaluation of O-Ring Halcyon Linac: A real-world study**

**Correlation between the warning symptoms and prognosis of cardiac arrest**
Zheng K, Bai Y, Zhai QR, Du LF, Ge HX, Wang GX, Ma QB

**Serum ferritin levels in children with attention deficit hyperactivity disorder and tic disorder**
Tang CY, Wen F

**Application of metagenomic next-generation sequencing in the diagnosis of infectious diseases of the central nervous system after empirical treatment**
Chen YY, Guo Y, Xue XH, Pang F

**Prognostic role of multiple abnormal genes in non-small-cell lung cancer**

**Prospective single-center feasible study of innovative autorelease bile duct supporter to delay adverse events after endoscopic papillectomy**

**Performance of Dexcom G5 and FreeStyle Libre sensors tested simultaneously in people with type 1 or 2 diabetes and advanced chronic kidney disease**
Olafsdottir AF, Andelin M, Saeed A, Sofizadeh S, Hamoodi H, Jansson PA, Lind M

**Complications of chronic pancreatitis prior to and following surgical treatment: A proposal for classification**
Murruste M, Kirsimägi Ü, Kase K, Veršinina T, Talving P, Lepner U

**Effects of comprehensive nursing on postoperative complications, mental status and quality of life in patients with glioma**
Dong H, Zhang XL, Deng CX, Luo B

**Predictors of long-term anxiety and depression in discharged COVID-19 patients: A follow-up study**
Boyraz RK, Şahan E, Boylu ME, Korpoar İ

**Same-day single-dose vs large-volume split-dose regimens of polyethylene glycol for bowel preparation: A systematic review and meta-analysis**
### Contents

**Thrice Monthly Volume 10 Number 22 August 6, 2022**

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7859</td>
<td>Rectal nonsteroidal anti-inflammatory drugs, glyceryl trinitrate, or combinations for prophylaxis of post-endoscopic retrograde cholangiopancreatography pancreatitis: A network meta-analysis&lt;br&gt;Shi QQ, Huang GX, Li W, Yang JR, Ning XY</td>
</tr>
<tr>
<td>7872</td>
<td>Effect of celecoxib on improving depression: A systematic review and meta-analysis&lt;br&gt;Wang Z, Wu Q, Wang Q</td>
</tr>
</tbody>
</table>

#### CASE REPORT

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7883</td>
<td>Rectal mature teratoma: A case report&lt;br&gt;Liu JL, Sun PL</td>
</tr>
<tr>
<td>7890</td>
<td>Antibiotic and glucocorticoid-induced recapitulated hematological remission in acute myeloid leukemia: A case report and review of literature&lt;br&gt;Sun XY, Yang XD, Yang XQ, Ju B, Xu NN, Xu J, Zhao XC</td>
</tr>
<tr>
<td>7899</td>
<td>Non-secretory multiple myeloma expressed as multiple extramedullary plasmacytoma with an endobronchial lesion mimicking metastatic cancer: A case report&lt;br&gt;Lee SB, Park CY, Lee HJ, Hong R, Kim WS, Park SG</td>
</tr>
<tr>
<td>7906</td>
<td>Latamoxef-induced severe thrombocytopenia during the treatment of pulmonary infection: A case report&lt;br&gt;Zhang RY, Zhang JJ, Li JM, Xu YY, Xu YH, Cai XJ</td>
</tr>
<tr>
<td>7913</td>
<td>Multicentric reticulohistiocytosis with prominent skin lesions and arthritis: A case report&lt;br&gt;Xu XL, Liang XH, Liu J, Deng X, Zhang L, Wang ZG</td>
</tr>
<tr>
<td>7924</td>
<td>Brainstem abscesses caused by <em>Listeria monocytogenes</em>: A case report&lt;br&gt;Wang J, Li YC, Yang KY, Wang J, Dong Z</td>
</tr>
<tr>
<td>7931</td>
<td>Primary hypertension in a postoperative paraganglioma patient: A case report&lt;br&gt;Wei JH, Yan HL</td>
</tr>
<tr>
<td>7936</td>
<td>Long-term survival of gastric mixed neuroendocrine-non-neuroendocrine neoplasm: Two case reports&lt;br&gt;Woo LT, Ding YF, Mao CY, Qian J, Zhang XM, Xu N</td>
</tr>
<tr>
<td>7944</td>
<td>Percutaneous transforaminal endoscopic decompression combined with percutaneous vertebroplasty in treatment of lumbar vertebral body metastases: A case report&lt;br&gt;Ran Q, Li T, Kuang ZP, Guo XH</td>
</tr>
<tr>
<td>7950</td>
<td>Atypical imaging features of the primary spinal cord glioblastoma: A case report&lt;br&gt;Liang XY, Chen YP, Li Q, Zhou ZW</td>
</tr>
<tr>
<td>7960</td>
<td>Resection with limb salvage in an Asian male adolescent with Ewing’s sarcoma: A case report&lt;br&gt;Lai CY, Chen KJ, Ho TY, Li LY, Kuo CC, Chen HT, Fong YC</td>
</tr>
<tr>
<td>7968</td>
<td>Early detection of circulating tumor DNA and successful treatment with osimertinib in thr790met-positive leptomeningeal metastatic lung cancer: A case report&lt;br&gt;Xu LQ, Wang YJ, Shen SL, Wu Y, Duan HZ</td>
</tr>
</tbody>
</table>
Contents

Thrice Monthly Volume 10 Number 22 August 6, 2022

7973 Delayed arterial symptomatic epidural hematoma on the 14th day after posterior lumbar interbody fusion: A case report
Hao SS, Gao ZF, Li HK, Liu S, Dong SL, Chen HL, Zhang ZF

7982 Clinical and genetic analysis of nonketotic hyperglycinemia: A case report
Ning JJ, Li F, Li SQ

7989 Ectopic Cushing's syndrome in a patient with metastatic Merkel cell carcinoma: A case report
Ishay A, Touma E, Vornicova O, Dodik-Gad R, Goldman T, Bisharat N

7994 Occurrence of MYD88L265P and CD79B mutations in diffuse large b cell lymphoma with bone marrow infiltration: A case report
Huang WY, Weng ZY

8003 Rare case of compartment syndrome provoked by inhalation of polyurethane agent: A case report
Choi JH, Oh HM, Hwang JH, Kim KS, Lee SY

8009 Acute ischemic Stroke combined with Stanford type A aortic dissection: A case report and literature review
He ZY, Yao LP, Wang XK, Chen NY, Zhao JJ, Zhou Q, Yang XF

8018 Compound-honeysuckle-induced drug eruption with special manifestations: A case report
Zhou LF, Lu R

8025 Spontaneous internal carotid artery pseudoaneurysm complicated with ischemic stroke in a young man: A case report and review of literature
Zhong YL, Feng JP, Luo H, Gong XH, Wei ZH

8034 Microcystic adnexal carcinoma misdiagnosed as a "recurrent epidermal cyst": A case report
Yang SX, Mou Y, Wang S, Hu X, Li FQ

8040 Accidental discovery of appendiceal carcinoma during gynecological surgery: A case report
Wang L, Dong Y, Chen YH, Wang YN, Sun L

8045 Intra-ampullary papillary-tubular neoplasm combined with ampullary neuroendocrine carcinoma: A case report
Zavrtanik H, Lucar B, Tomažič A

LETTER TO THE EDITOR

8054 Commentary on "Primary orbital monophasic synovial sarcoma with calcification: A case report"
Tokur O, Aydın S, Karavas E
**ABOUT COVER**

Editorial Board Member of *World Journal of Clinical Cases*, Bennete Aloysius Fernandes, MDS, Professor, Faculty of Dentistry, SEGi University, Kota Damansara 47810, Selangor, Malaysia. drben17@yahoo.com

**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 abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for *WJCC* as 1.534; IF without journal self cites: 1.491; 5-year IF: 1.599; Journal Citation Indicator: 0.28; Ranking: 135 among 172 journals in medicine, general and internal; and Quartile category: Q4. The *WJCC*’s CiteScore for 2021 is 1.2 and Scopus CiteScore rank 2021: General Medicine is 443/826.

**RESPONSIBLE EDITORS FOR THIS ISSUE**

Production Editor: Xu Guo; Production Department Director: Xiang Li; Editorial Office Director: Jin-Lei Wang.

<table>
<thead>
<tr>
<th>NAME OF JOURNAL</th>
<th>INSTRUCTIONS TO AUTHORS</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>World Journal of Clinical Cases</em></td>
<td><a href="https://www.wjgnet.com/bpg/gerinfo/204">https://www.wjgnet.com/bpg/gerinfo/204</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ISSN</th>
<th>GUIDELINES FOR ETHICS DOCUMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSN 2307-8960 (online)</td>
<td><a href="https://www.wjgnet.com/bpg/gerinfo/287">https://www.wjgnet.com/bpg/gerinfo/287</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LAUNCH DATE</th>
<th>GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>PUBLICATION ETHICS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>EDITORS-IN-CHIEF</th>
<th>PUBLICATION MISCONDUCT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>EDITORIAL BOARD MEMBERS</th>
<th>ARTICLE PROCESSING CHARGE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PUBLICATION DATE</th>
<th>STEPS FOR SUBMITTING MANUSCRIPTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 6, 2022</td>
<td><a href="https://www.wjgnet.com/bpg/gerinfo/239">https://www.wjgnet.com/bpg/gerinfo/239</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COPYRIGHT</th>
<th>ONLINE SUBMISSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>© 2022 Baishideng Publishing Group Inc</td>
<td><a href="https://www.f6publishing.com">https://www.f6publishing.com</a></td>
</tr>
</tbody>
</table>

© 2022 Baishideng Publishing Group Inc. All rights reserved. 7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

E-mail: bpgoffice@wjgnet.com [https://www.wjgnet.com](https://www.wjgnet.com)
Non-secretory multiple myeloma expressed as multiple extramedullary plasmacytoma with an endobronchial lesion mimicking metastatic cancer: A case report

Seul Bi Lee, Chi Young Park, Hee Jeong Lee, Ran Hong, Woo Shin Kim, Sang-Gon Park

Seul Bi Lee, Chi Young Park, Hee Jeong Lee, Sang-Gon Park, Department of Hemato-oncology, Chosun University Hospital, Gwangju 501-717, South Korea

Ran Hong, Department of Pathology, Chosun University Hospital, Gwangju 501-717, South Korea

Woo Shin Kim, Department of Laboratory Medicine, Chosun University Hospital, Gwangju 501-717, South Korea

Corresponding author: Sang-Gon Park, MD, Assistant Professor, Department of hemato-oncology, Chosun Univ Hosp, 365 Pilmun-daero, Dong-gu, Gwangju 501-717, South Korea. sgpark@chosun.ac.kr

Abstract

BACKGROUND
Non-secretory multiple myeloma (MM) is a rare condition that accounts for only 3% of MM cases and is defined by normal serum and urine immunofixation and a normal serum free light chain ratio. Non-secretory MM with multiple extramedullary plasmacytomas derived from endobronchial lesions is extremely rare and can be misdiagnosed as metastasis of solid cancer.

CASE SUMMARY
A 36-year-old man presented with progressive facial swelling and nasal congestion with cough. Various imaging studies revealed an endobronchial mass in the left bronchus and a large left maxillary mass with multiple destructive bone metastatic lesions. He initially presented with lung cancer and multiple metastases. However, pathologic reports showed multiple extramedullary plasmacytomas in the left maxilla and the left bronchus. There was no change in the serum and urine monoclonal protein levels, and no abnormalities were observed in laboratory examinations, including hemoglobin, calcium, and creatinine levels. The bone marrow was hypercellular, with 13.49% plasma cells. The patient was diagnosed with non-secretory MM expressed as multiple extramedullary plasmacytomas with endobronchial lesions in a rare location. Radiation therapy for symptomatic lesions with high-dose dexamethasone was started, and the size of the left maxillary sinus lesion dramatically decreased. In the future, chemotherapy will be administered to control lesions in other areas.
CONCLUSION
We present a rare case of non-secretory MM with multiple extramedullary plasmacytoma with an endobronchial lesion.

Key Words: Maxillary mass lesion; Destructive bone metastatic lesion; Multiple extramedullary plasmacytoma; Endobronchial lesion; Non-secretory multiple myeloma; Case report

Core Tip: Endobronchial and maxillary mass lesions without abnormality on laboratory examination are easily misdiagnosed as metastases of primary lung cancer or other head and neck malignancies. Histopathological studies are required to avoid erroneous diagnoses.

INTRODUCTION
Multiple myeloma (MM) is a mature B cell neoplasm that accounts for 10% of all hematologic malignancies and is defined by the presence of ≥ 10% of clonal plasma cells in the bone marrow or biopsy-proven extramedullary plasmacytoma and the presence of related tissue or organ damage[1]. Symptomatic MM is defined by the presence of a monoclonal protein in the serum or urine, plasma cells in the bone marrow (at least 10%), and presence of related organ disorders (hypercalcemia, renal insufficiency, anemia, and bone lesions)[1,2]. MM is primarily observed in older patients and considered difficult to treat[3]. Over the past decade, the median survival of patients with myeloma has increased with the development of therapeutic agents, including immunomodulatory drugs (thalidomide and lenalidomide) and proteasome inhibitors (bortezomib). High-dose therapy followed by autologous stem cell transplantation (ASCT) has also contributed to this improvement in the survival rate[4].

In most patients, plasma cell proliferation is restricted to the bone marrow. However, in some cases, extramedullary plasma cell proliferation is also observed in other tissues, such as the nasal cavity, lung, and pleura[5]. Endobronchial plasmacytoma has been reported in several cases. Although exceedingly rare, according to published reports, most cases were reported in solitary lesions or advanced MM[6]. Here, we report the first diagnosed case of multiple extramedullary plasmacytoma with endobronchial lesions in non-secretory MM.

CASE PRESENTATION

Chief complaints
A 36-year-old man presented to our hospital for evaluation of progressively worsening facial swelling and nasal congestion. He was initially diagnosed with a nasal polyp with sinusitis and underwent polyp removal with antibiotic therapy.

History of present illness
The patient visited our hospital for further evaluation after redeveloping facial swelling and nasal congestion, this time accompanied by a gradually worsening cough with sputum and blurred vision in the left eye.

History of past illness
The patient had no previous medical history.

Personal and family history
The patient is a non-alcoholic and non-smoker. He has no family history.
Physical examination
The patient showed painful facial swelling and blurred vision. The patient's respiratory rate was 22 breaths per minute, blood pressure was p (B) = 15.99/10.7 kPa, and oxygen saturation in room air was 90%.

Laboratory examinations
Based on laboratory findings, the hemoglobin level was 11.9 g/dL (normal range, 12-16 g/dL), and the creatinine level was 0.7 mg/dL (normal range, 0.5-1.3 mg/dL). Monoclonal proteins could not be detected by serum and urine protein immunofixation electrophoresis. The albumin level was 3.77 g/dL (normal range, 3.5-5.5 g/dL) and beta-2-microglobulin level was 4.2 mg/L (normal range, 0.0-2.4 mg/L). The lactate dehydrogenase level was 271 U/L (normal range, 125-220 U/L).

Imaging examinations
Computed tomography of the neck and thorax revealed a solid mass occupying the left maxillary sinus and an endobronchial lesion in the left main bronchus (Figure 1). Positron emission tomography/computed tomography revealed a hypermetabolic mass in the left maxillary sinus extending to the left ethmoid sinus and nasal cavity and multiple hypermetabolic metastatic nodules in both the cervical and left supraclavicular areas. Multiple hypermetabolic osseous metastases had spread to the sternum, ribs, right scapula, right humerus, thoracic and lumbar spines, pelvic bone, and left femur. Focal hypermetabolic nodular lesions in the left main bronchus were also observed (Figure 1). Primary lung cancer with multiple bone metastases was initially suspected, but double primary lung cancer with maxillary sinus cancer was excluded. We immediately performed a pathologic examination of the maxillary sinus mass and the endobronchial mass using bronchoscopy. Bronchoscopic findings showed a 1.5-cm protruding mass with pedicles arising from the anterior wall of the left proximal main bronchus (Figure 1), which was suspected to be primary lung cancer. Initially, the maxillary mass had pathologic findings of monomorphic plasmacytoid cytoplasm (positive for CD138, kappa light chain, and negative for CD3, CD20, and lambda light chain) (Figure 2), and it was subsequently diagnosed as a plasmacytoma, which was confirmed by the bronchoscopic biopsy result (Figure 2).

Further diagnostic workup
The patient was referred to the hematology department to undergo an evaluation for systemic MM. Biochemical tests revealed normal calcium and creatinine levels, and serum and urine immunofixation were negative for monoclonal proteins. However, the bone marrow biopsy from the iliac crest showed hypercellularity for his age with diffusely infiltrated plasma cells (13.49%) (Figure 3). Although the patient had no anemia and the serum creatinine levels were normal, a diagnosis of non-secretory MM was considered based on the bone marrow biopsy findings and the multiple lesions, including confirmation of the maxillary sinus and endobronchial lesions as plasmacytoma.

FINAL DIAGNOSIS
The patient was finally diagnosed with non-secretory MM, expressed as multiple extramedullary plasmacytomas with an endobronchial lesion. The International Staging System stage at the time of diagnosis was II.

TREATMENT
The left maxillary sinus mass extended to the nasopharynx and left ethmoid sinus, which had caused severe facial edema and blurred vision in the left eye. Moreover, endobronchial lesions also caused severe respiratory distress symptoms. Therefore, we started high-dose steroid therapy with dexamethasone 40 mg for 4 days. Palliative radiation therapy of the left maxillary sinus lesion was performed simultaneously. After steroid administration, facial edema dramatically decreased, and respiratory distress symptoms improved (Figure 4). We continued radiation therapy on the symptomatic lesions to a total dose of 15 Gy.

OUTCOME AND FOLLOW-UP
Finally, the facial mass and symptoms almost regressed, and the patient will subsequently undergo chemotherapy with bortezomib, thalidomide, and dexamethasone, followed by ASCT.
Figure 1 Imaging at admission. A: Contrast-enhanced neck computed tomography shows a bulky mass in the left maxillary sinus extending to the orbit, nasal cavity, ethmoid sinus, infratemporal fossa, and pterygopalatine fossa; bone destruction extends to the nasal cavity; B: Contrast-enhanced chest computed tomography shows an enhanced nodule approximately 0.8 cm in size in the left main bronchus; C-E: 18F-fluorodeoxyglucose positron emission/computed tomography shows a large expansile hypermetabolic mass in the left maxillary sinus and hypermetabolic focal activity in the nasopharynx, multiple metastatic lymphadenopathies in both cervical and left supraclavicular areas, and multiple osseous metastases. There is a focal hypermetabolic nodular lesion in the left main bronchus; F and G: Bronchoscopy shows a 1.0-cm sized nodular lesion with pedicles arising from the anterior wall of the left main bronchus.

DISCUSSION

In the initial stage of diagnosis, our patient was strongly considered as having primary lung cancer with multiple bone metastases or double primary lung cancer with maxillary sinus cancer. Our patient’s laboratory tests showed normal results. For this reason, we excluded the possibility of plasmacytoma or non-secretory MM. However, the biopsy confirmed an extramedullary plasmacytoma. In addition, bone marrow examination showed more than 10% plasma cell infiltration without alterations in serum or urine paraprotein and immunoglobin subtype. Thus, we diagnosed the patient with non-secretory MM based on bone marrow examination and biopsy results.

Extramedullary plasmacytoma is a variant of a plasma cell tumor involving organs outside the bone marrow without any sign of systemic involvement (primary solitary plasmacytoma) or secondary to MM[7]. The differential diagnosis of plasma cell dyscrasias is vital because these diseases may exhibit diverse clinical courses and prognoses. Extramedullary plasmacytoma is most often located in the upper respiratory tract and nasopharynx, and involvement of the lower respiratory tract is rarely observed[8]. Endobronchial plasmacytoma is a rare manifestation of extramedullary plasmacytoma[6], with very few cases reported in the literature. Most endobronchial plasmacytoma cases were solitary plasmacytomas with no systemic involvement of MM[9-12]. Our patient showed systemic involvement of a plasma cell malignancy.

Extramedullary plasmacytoma is associated with adverse prognoses in patients with newly diagnosed and relapsing MM[13]. Almost all patients show multiple extramedullary plasmacytomas as the terminal event of their MM[13,14], whereas this patient showed multiple extramedullary plasmacytomas at the initial diagnosis of MM.

Non-secretory MM is a rare variant that accounts for 1%-5% of all cases of MM. It is characterized by the absence of monoclonal gammapathy in the serum and urine[15]. In this case, monoclonal gammapathy was not observed, and there was no organ dysfunction. Due to the inability to detect monoclonal proteins, it is difficult to establish an accurate diagnosis, and misdiagnosis of this condition as a solitary plasmacytoma delays systemic treatment[16,17].
CONCLUSION

Initially, this patient was diagnosed with primary lung cancer with multiple metastases because there was no reversal of the A/G ratio or increase in serum monoclonal protein levels. However, bone marrow and tissue biopsy results showed systemic involvement of MM. Thus, we present a case of non-secretory MM expressed as multiple extramedullary plasmacytoma with an endobronchial lesion.
Figure 4 Imaging after radiotherapy. A: Before radiotherapy; B: During radiotherapy; and C: After completion of radiotherapy, bulky mass of the left maxillary sinus decreased after radiotherapy.

Such cases are extremely rare and can be easily misdiagnosed as solid cancers of the upper respiratory tract until histologic confirmation. These clinical situations are extraordinarily heterogeneous, and care must be taken before making a diagnosis. These cases should be considered as having high-risk myeloma systemic involvement and treated appropriately.

FOOTNOTES

Author contributions: Lee SB were the major contributors in writing the manuscript; Park CY, Lee HJ, Hong R, and Kim WS advised the manuscript; Park SG were involved in drafting, writing and editing the manuscript, and reviewed the manuscript as corresponding author; all authors read and approved the final manuscript.

Supported by the Clinical Medicine Research Institute at Chosun University Hospital (2019).

Informed consent statement: All study participant provided informed written consent prior to study enrollment.

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).

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/Territory of origin: Spain

ORCID number: Seul Bi Lee 0000-0001-8086-4631; Chi Young Park 0000-0001-5216-7257; Hee Jeong Lee 0000-0001-8295-
REFERENCES


