

# World Journal of *Clinical Cases*

*World J Clin Cases* 2023 September 26; 11(27): 6318-6669



**MINIREVIEWS**

- 6318 Characteristics of amino acid metabolism in colorectal cancer

*Xu F, Jiang HL, Feng WW, Fu C, Zhou JC*

**ORIGINAL ARTICLE****Clinical and Translational Research**

- 6327 Exploring the pharmacological mechanism of Wuzhuyu decoction on hepatocellular carcinoma using network pharmacology

*Ouyang JY, Lin WJ, Dong JM, Yang Y, Yang HK, Zhou ZL, Wang RQ*

- 6344 Identification of potential diagnostic and prognostic biomarkers for breast cancer based on gene expression omnibus

*Zhang X, Mi ZH*

**Retrospective Cohort Study**

- 6363 Treatment of proximal humeral fractures accompanied by medial calcar fractures using fibular autografts: A retrospective, comparative cohort study

*Liu N, Wang BG, Zhang LF*

**Retrospective Study**

- 6374 Effectiveness of out-fracture of the inferior turbinate with reduction nasal bone fracture

*Kim SY, Nam HJ, Byeon JY, Choi HJ*

- 6383 Prognostic model of hepatocellular carcinoma based on cancer grade

*Zhang GX, Ding XS, Wang YL*

- 6398 Oncologic efficacy of gonadotropin-releasing hormone agonist in hormone receptor-positive very young breast cancer patients treated with neoadjuvant chemotherapy

*Choi HJ, Lee JH, Jung CS, Ryu JM, Chae BJ, Lee SK, Yu JH, Kim SW, Nam SJ, Lee JE, Jung YJ, Kim HY*

- 6407 Correlation analysis of serum thyroglobulin, thyroid-stimulating hormone levels, and thyroid-cancer risk in thyroid nodule surgery

*Shuai JH, Leng ZF, Wang P, Ji YC*

- 6415 Closed thoracic drainage in elderly patients with chronic obstructive pulmonary disease complicated with spontaneous pneumothorax: A retrospective study

*Wang W, Zhu DN, Shao SS, Bao J*

**Observational Study**

- 6424 *Helicobacter pylori* eradication treatment for primary gastric diffuse large B-cell lymphoma: A single-center analysis

*Saito M, Mori A, Kajikawa S, Yokoyama E, Kanaya M, Izumiyama K, Morioka M, Kondo T, Tanei ZI, Shimizu A*

**Prospective Study**

- 6431** Effect of polyene phosphatidylcholine/ursodeoxycholic acid/ademetionine on pregnancy outcomes in intrahepatic cholestasis  
*Dong XR, Chen QQ, Xue ML, Wang L, Wu Q, Luo TF*

**SYSTEMATIC REVIEWS**

- 6440** Maternal diaphragmatic hernia in pregnancy: A systematic review with a treatment algorithm  
*Augustin G, Kovač D, Karadjole VS, Zajec V, Herman M, Hrbač P*

**META-ANALYSIS**

- 6455** Laparoscopic *vs* open radical resection in management of gallbladder carcinoma: A systematic review and meta-analysis  
*He S, Yu TN, Cao JS, Zhou XY, Chen ZH, Jiang WB, Cai LX, Liang X*

**CASE REPORT**

- 6476** Acute acquired concomitant esotropia with congenital paralytic strabismus: A case report  
*Zhang MD, Liu XY, Sun K, Qi SN, Xu CL*
- 6483** Tumor recurrence after pathological complete response in locally advanced gastric cancer after neoadjuvant therapy: Two case reports  
*Xing Y, Zhang ZL, Ding ZY, Song WL, Li T*
- 6491** Acute peritonitis secondary to post-traumatic appendicitis: A case report and literature review  
*Habachi G, Aziza B, Ben-Ammar S, Maherzi O, Houas Y, Kerkeni Y, Sahli S, Jouini R*
- 6498** Fournier's gangrene after insertion of thermo-expandable prostatic stent for benign prostatic hyperplasia: A case report  
*Jung HC, Kim YU*
- 6505** Methyl-CpG-Binding protein 2 duplication syndrome in a Chinese patient: A case report and review of the literature  
*Xing XH, Takam R, Bao XY, Ba-alwi NA, Ji H*
- 6515** Blood purification for treatment of non-liquefied multiple liver abscesses and improvement of T-cell function: A case report  
*Tang ZQ, Zhao DP, Dong AJ, Li HB*
- 6523** Eosinophilic granulomatosis with polyangiitis, asthma as the first symptom, and subsequent Loeffler endocarditis: A case report  
*He JL, Liu XY, Zhang Y, Niu L, Li XL, Xie XY, Kang YT, Yang LQ, Cai ZY, Long H, Ye GF, Zou JX*
- 6531** Left atrium veno-arterial extra corporeal membrane oxygenation as temporary mechanical support for cardiogenic shock: A case report  
*Lamastra R, Abbott DM, Degani A, Pellegrini C, Veronesi R, Pelenghi S, Dezza C, Gazzaniga G, Belliato M*

- 6537** Successful treatment of eyebrow intradermal nevi by shearing combined with electrocautery and curettage: Two case reports  
*Liu C, Liang JL, Yu JL, Hu Q, Li CX*
- 6543** Amniotic membrane mesenchymal stromal cell-derived secretome in the treatment of acute ischemic stroke: A case report  
*Lin FH, Yang YX, Wang YJ, Subbiah SK, Wu XY*
- 6551** Managing spindle cell sarcoma with surgery and high-intensity focused ultrasound: A case report  
*Zhu YQ, Zhao GC, Zheng CX, Yuan L, Yuan GB*
- 6558** Triplet regimen as a novel modality for advanced unresectable hepatocellular carcinoma: A case report and review of literature  
*Zhao Y, He GS, Li G*
- 6565** Acute diquat poisoning case with multiorgan failure and a literature review: A case report  
*Fan CY, Zhang CG, Zhang PS, Chen Y, He JQ, Yin H, Gong XJ*
- 6573** Fungal corneal ulcer after repair of an overhanging filtering bleb: A case report  
*Zhao J, Xu HT, Yin Y, Li YX, Zheng YJ*
- 6579** Combination therapy with toripalimab and anlotinib in advanced esophageal squamous cell carcinoma: A case report  
*Chen SC, Ma DH, Zhong JJ*
- 6587** Removal of a pulmonary artery foreign body during pulse ablation in a patient with atrial fibrillation: A case report  
*Yan R, Lei XY, Li J, Jia LL, Wang HX*
- 6592** Delayed-onset *micrococcus luteus*-induced postoperative endophthalmitis several months after cataract surgery: A case report  
*Nam KY, Lee HW*
- 6597** Anesthetic management of a pregnant patient with Eisenmenger's syndrome: A case report  
*Zhang Y, Wei TT, Chen G*
- 6603** Recurrence of unilateral angioedema of the tongue: A case report  
*Matsuhisa Y, Kenzaka T, Shimizu H, Hirose H, Gotoh T*
- 6613** Transverse mesocolic hernia with intestinal obstruction as a rare cause of acute abdomen in adults: A case report  
*Zhang C, Guo DF, Lin F, Zhan WF, Lin JY, Lv GF*
- 6618** Compound heterozygous mutations in tripeptidyl peptidase 1 cause rare autosomal recessive spinocerebellar ataxia type 7: A case report  
*Liu RH, Wang XY, Jia YY, Wang XC, Xia M, Nie Q, Guo J, Kong QX*

- 6624** Treatment of posterior interosseous nerve entrapment syndrome with ultrasound-guided hydrodissection: A case report  
*Qin LH, Cao W, Chen FT, Chen QB, Liu XX*
- 6631** Rapidly growing extensive polypoid endometriosis after gonadotropin-releasing hormone agonist discontinuation: A case report  
*Zhang DY, Peng C, Huang Y, Cao JC, Zhou YF*
- 6640** Preserving finger length in a patient with symmetric digital gangrene under local anesthesia: A case report  
*Kim KH, Ko IC, Kim H, Lim SY*
- 6646** Reconstruction of the lower back wound with delayed infection after spinal surgery: A case report  
*Kim D, Lim S, Eo S, Yoon JS*
- 6653** Solitary intraosseous neurofibroma in the mandible mimicking a cystic lesion: A case report and review of literature  
*Zhang Z, Hong X, Wang F, Ye X, Yao YD, Yin Y, Yang HY*
- 6664** Complete response of metastatic *BRAF* V600-mutant anaplastic thyroid cancer following adjuvant dabrafenib and trametinib treatment: A case report  
*Lee SJ, Song SY, Kim MK, Na HG, Bae CH, Kim YD, Choi YS*

**ABOUT COVER**

Editorial Board Member of *World Journal of Clinical Cases*, Alexandru Corlateanu, MD, PhD, Reader (Associate Professor), Department of Respiratory Medicine, Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau 2001, Moldova. alexandru\_corlateanu@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, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2023 Edition of Journal Citation Reports® cites the 2022 impact factor (IF) for WJCC as 1.1; IF without journal self cites: 1.1; 5-year IF: 1.3; Journal Citation Indicator: 0.26; Ranking: 133 among 167 journals in medicine, general and internal; and Quartile category: Q4.

**RESPONSIBLE EDITORS FOR THIS ISSUE**

Production Editor: *Ying-Yi Yuan*; 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**

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

**EDITORIAL BOARD MEMBERS**

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

**PUBLICATION DATE**

September 26, 2023

**COPYRIGHT**

© 2023 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>

# Removal of a pulmonary artery foreign body during pulse ablation in a patient with atrial fibrillation: A case report

Rui Yan, Xin-Yu Lei, Jun Li, Liang-Liang Jia, Hai-Xiong Wang

**Specialty type:** Cardiac and cardiovascular systems

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

**Peer-review model:** Single blind

**Peer-review report's scientific quality classification**

Grade A (Excellent): A

Grade B (Very good): 0

Grade C (Good): 0

Grade D (Fair): D

Grade E (Poor): 0

**P-Reviewer:** Mishra AK, United States; Quesada A, Spain

**Received:** June 16, 2023

**Peer-review started:** June 16, 2023

**First decision:** July 28, 2023

**Revised:** August 9, 2023

**Accepted:** August 23, 2023

**Article in press:** August 23, 2023

**Published online:** September 26, 2023



**Rui Yan, Xin-Yu Lei, Jun Li, Hai-Xiong Wang**, Department of Cardiology, Shanxi Cardiovascular Hospital, Taiyuan 030000, Shanxi Province, China

**Liang-Liang Jia**, The CT Room of the Imaging Department, Shanxi Cardiovascular Hospital, Taiyuan 030000, Shanxi Province, China

**Corresponding author:** Hai-Xiong Wang, MD, PhD, Doctor, Department of Cardiology, Shanxi Cardiovascular Hospital, No. 18 Yifen Street, Taiyuan 030000, Shanxi Province, China. [cz1976whx@126.com](mailto:cz1976whx@126.com)

## Abstract

### BACKGROUND

Foreign bodies in the pulmonary circulation have been documented in the literature and are typically caused by interventional procedures. However, reports of pulmonary artery foreign bodies during femoral vein puncture are rare, and there is no description of this complication from the guidewire surface flows into the pulmonary artery during a pulse ablation in a patient with atrial fibrillation.

### CASE SUMMARY

We described a case in which a linear foreign body suddenly appeared on fluoroscopy image during pulsed ablation of atrial fibrillation. Multiposition angiography showed that the foreign body was currently lodged in the pulmonary artery but was hemodynamically stable. We then chose to use an interventional approach to remove the foreign body from the pulmonary artery. This foreign body was subsequently confirmed to be from the hydrophilic coating of the guidewire surface. This may be related to the difficulties encountered during the puncture of the femoral vein. This is a rare and serious complication of femoral vein puncture. Therefore, we reported this case in order to avoid a similar situation.

### CONCLUSION

Mismatches between interventional devices from different manufacturers used for femoral venipuncture may result in pulmonary artery foreign bodies.

**Key Words:** Femoral vein puncture; Atrial fibrillation; Guide wire; Complication; Pulmonary artery foreign body; Case report

©The Author(s) 2023. Published by Baishideng Publishing Group Inc. All rights reserved.

**Core Tip:** A case of pulmonary artery foreign body removal during pulsed atrial fibrillation ablation was reported. This is a rare and serious complication of femoral vein puncture. Therefore, we reported this case in order to avoid a similar situation.

**Citation:** Yan R, Lei XY, Li J, Jia LL, Wang HX. Removal of a pulmonary artery foreign body during pulse ablation in a patient with atrial fibrillation: A case report. *World J Clin Cases* 2023; 11(27): 6587-6591

**URL:** <https://www.wjgnet.com/2307-8960/full/v11/i27/6587.htm>

**DOI:** <https://dx.doi.org/10.12998/wjcc.v11.i27.6587>

## INTRODUCTION

Foreign bodies in the pulmonary circulation have been documented in the literature and are typically caused by interventional procedures[1]. During the diagnosis and treatment of cardiovascular intervention, vascular sheath or catheter breakage may occasionally occur, and the residue in the vessel can easily float to various parts of the organ along the blood flow. Despite the low incidence, foreign body embolization can trigger serious and potentially fatal complications. Therefore, the removal of these foreign bodies, whenever possible, is recommended[2]. Herein, we described a case in which a linear foreign body suddenly appeared on imaging during pulsed ablation of atrial fibrillation. Multiposition angiography showed that the foreign body was currently lodged in the pulmonary artery but was hemodynamically stable. We then chose to use an interventional approach to remove the foreign body from the pulmonary artery. This is a rare and serious complication of atrial fibrillation ablation. Therefore, careful manipulation of the guidewire is essential to prevent a similar situation.

## CASE PRESENTATION

### Chief complaints

A 63-year-old male with a history of paroxysmal atrial fibrillation was referred to our hospital for pulse ablation.

### History of present illness

Three years prior to presentation, the patient had palpitations and shortness of breath during intermittent activities such as walking fast or uphill, which could be relieved by rest. On July 14, 2022, the patient felt dizzy and experienced palpitations. The dynamic electrocardiogram showed paroxysmal atrial fibrillation. Therefore, he came to our hospital for diagnosis and treatment.

### History of past illness

The patient had a 3-year history of hypertension and was currently treated with antihypertensive drugs with ideal blood pressure control. There was no other medical history. Previous carotid ultrasound indicated carotid plaque formation.

### Personal and family history

He was born in the original place, had not been to the epidemic area, had no history of smoking, drinking, and had no family genetic history.

### Physical examination

The patient's blood pressure was 136/72 mmHg, the respiratory rate was 18 beats per minute, the pulse was 70 beats per minute, and the temperature was 36.4 °C. The patient's body mass index was 25.7. Physical examination of the heart, lungs, and abdomen showed no positive signs.

### Laboratory examinations

Laboratory tests showed no positive results.

### Imaging examinations

Echocardiography showed normal cardiac morphology and structure, mild valvular regurgitation, normal left ventricular systolic function, and reduced diastolic function. Computed tomography scan of the left atrial and pulmonary vein showed enlargement of the left atrium without abnormal density in the left atrial appendage cavity.

## FINAL DIAGNOSIS

The patient was diagnosed with paroxysmal atrial fibrillation.



## TREATMENT

A pulse ablation was the recommended treatment. After all the preparations were in place, we prepared the femoral venipuncture. We used an 11F puncture needle sheath (11F, Terumo, Japan), which was from a different manufacturer than the first time the procedure was performed. This sheath has its own guide wire and puncture needle, and the surface of the guide wire is covered by a plastic film. Although we observed the difference in the guide wire, we did not pay attention to it. During the puncture process, the plastic trocar (a part of the 11F puncture needle sheath, Terumo, Japan) became deformed due to the tortuosity of the vein and could not be smoothly delivered into the vein. We were forced to use an ordinary puncture needle (7F, Medtronic, United States) and then deliver the 11F sheath into the femoral vein through the guidewire exchange. After atrial septal puncture and a series of preoperative preparations, pulse ablation was initiated.

At the beginning of the ablation, we used imaging to guide the position of the ablation catheter, and there was no obvious abnormality. However, when we started to ablate the right inferior pulmonary vein, X-ray showed a linear foreign body in the field of view of the right inferior pulmonary vein, which was fixed and moved in place with the heart contraction (Figure 1A and B). During the operation, sufficient heparin was given to maintain the activated clotting time in the normal range, and the patient's hemodynamics were stable. Therefore, we successfully completed the right pulmonary vein ablation under X-ray.

Repeated multi-angle fluoroscopy could still clearly see the foreign body without obvious abnormal movement. After excluding the interference of external substances, we immediately performed pulmonary arteriovenous angiography, which confirmed that the foreign body was from the right pulmonary artery (Video). Then the patient received percutaneous intervention for a foreign body removal. It was successfully retrieved with a trap (Shanghai Shape Memory Company, China) (Video). It was a linear substance about 15 cm in length (Figure 1C). The patient returned safely to the ward and was discharged 2 d later.

Finally, all the instruments used in the operation were retained and tested, and it was confirmed that the foreign body came from the plastic coating on the surface of the new guide wire (Figure 2A). The foreign body entered the femoral vein and followed the circulation to the pulmonary artery.

Fortunately, the foreign body was found in time during the operation and treated promptly without more serious complications, such as pulmonary embolism. After operation, low molecular weight heparin was injected subcutaneously to prevent thrombosis.

## OUTCOME AND FOLLOW-UP

Pulse ablation of atrial fibrillation was successfully completed, and no atrial fibrillation occurred during postoperative follow-up.

## DISCUSSION

The reason why the plastic coating was able to enter the femoral vein was recalled repeatedly. It was considered that the mismatch between the traditional metal puncture needle and the new guide wire used at that time might be related. When the ordinary metal puncture needle and the guide wire were at an angle in the blood vessel and the blood return was not smooth and needed to be withdrawn, the surgeon chose to withdraw the guide wire first, so that the tip of the needle cut off the plastic coating on the surface of the guide wire, resulting in the creation of the foreign body (Figure 2B-D, Video). With the blood flow through the venous system, it gradually entered the right atrium and right ventricle and then flowed into the pulmonary artery. However, these events may have been avoided if the needle had been withdrawn first.

The formation of a foreign body in the pulmonary artery during atrial fibrillation ablation has not been reported in the domestic and foreign literature. In the previous literature, the formation of a foreign body in the pulmonary artery was mostly related to trauma or interventions[3]. Although small foreign bodies may not cause complete pulmonary embolism temporarily, they can lead to intimal thickening and fibrosis and gradually lead to severe embolism. Therefore, once the diagnosis is clear, it should be treated[4]. Percutaneous extraction of embolized catheters using femoral venous access is the gold standard. The right femoral venous access is preferred because it has a high success rate[5].

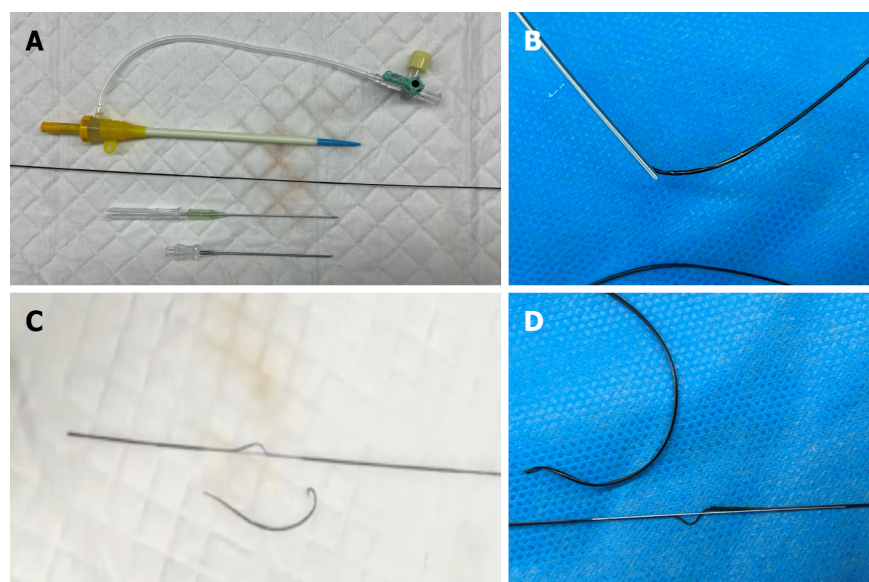
## CONCLUSION

Although our case was successful, this is a lesson to remember that it is essential to be good at observing, understanding the characteristics of each type of puncture needle sheath, reading the instructions carefully, and complying with the operating procedures strictly. In addition, mismatches between interventional devices from different manufacturers used for femoral venipuncture may result in pulmonary artery foreign bodies.



DOI: 10.12998/wjcc.v11.i27.6587 Copyright ©The Author(s) 2023.

**Figure 1 Foreign body.** A: A foreign body appeared in the right lower lung field; B: Pulmonary angiography showed a foreign body inside the right lower pulmonary artery; C: The foreign body was a line-like substance about 15 cm long.



DOI: 10.12998/wjcc.v11.i27.6587 Copyright ©The Author(s) 2023.

**Figure 2 Instruments for femoral vein puncture.** A: Needle sheath system (11F, Terumo, Japan); B-D: The formation of the foreign body.

## FOOTNOTES

**Author contributions:** Yan R and Wang HX contributed equally to this work; Yan R, Wang HX, Lei XY, Jia LL, and Li J performed the research; Wang HX contributed new reagents and analytical tools; Yan R and Wang HX analyzed the data and wrote the manuscript; All authors have read and approved the final manuscript.

**Supported by** the Natural Science Foundation of Shanxi Province, No. 20210302123346; and Shanxi Provincial Health Commission “Four batch” Science and Technology Innovation Project of Medical Development, No. 2021XM45.

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

**Conflict-of-interest statement:** The authors declare that they have no conflicts 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:** China

**ORCID number:** Hai-Xiong Wang [0000-0001-9905-7899](https://orcid.org/0000-0001-9905-7899).

**S-Editor:** Chen YL

**L-Editor:** Filipodia

**P-Editor:** Chen YL

## REFERENCES

- 1 **Ciarrocchi AP**, Parisi AM, Campisi A, Mazzarra S, Argnani D, Congiu S, Sanna S, Stella F. A strange case of foreign body embolism in the right lower pulmonary artery. *Gen Thorac Cardiovasc Surg* 2021; **69**: 894-896 [PMID: [33400199](#) DOI: [10.1007/s11748-020-01570-5](#)]
- 2 **Leite TFO**, Pazinato LV, Bortolini E, Pereira OI, Nomura CH, Filho JMDML. Endovascular Removal of Intravascular Foreign Bodies: A Single-Center Experience and Literature Review. *Ann Vasc Surg* 2022; **82**: 362-376 [PMID: [34936892](#) DOI: [10.1016/j.avsg.2021.12.003](#)]
- 3 **Actis Dato GM**, Aidala E, Zattera GF. Foreign bodies in the heart: surgical or medical therapy? *Ann Thorac Surg* 1999; **68**: 291-292 [PMID: [10421171](#) DOI: [10.1016/s0003-4975\(99\)00384-7](#)]
- 4 **Du ZZ**, Ren H, Song JF. Surgical treatment of pulmonary embolism. *Zhongguo Yixue Zazhi* 2006; **86**: 197-199 [DOI: [10.1007/s10330-009-0182-8](#)]
- 5 **Motta Leal Filho JM**, Carnevale FC, Nasser F, Santos AC, Sousa Junior Wde O, Zurstrassen CE, Affonso BB, Moreira AM. Endovascular techniques and procedures, methods for removal of intravascular foreign bodies. *Rev Bras Cir Cardiovasc* 2010; **25**: 202-208 [PMID: [20802912](#) DOI: [10.1590/s0102-76382010000200012](#)]



Published by **Baishideng Publishing Group Inc**  
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

**Telephone:** +1-925-3991568

**E-mail:** [bpgoffice@wjgnet.com](mailto:bpgoffice@wjgnet.com)

**Help Desk:** <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

