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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: *Si Zhao*; Production Department Director: *Xu Guo*; 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

February 6, 2023

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INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

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GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

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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>

Double pigtail catheter reduction for seriously displaced intravenous infusion port catheter: A case report

Yu Liu, Duan-Ming Du

Specialty type: Surgery

Provenance and peer review:

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): 0

Grade B (Very good): B

Grade C (Good): 0

Grade D (Fair): 0

Grade E (Poor): 0

P-Reviewer: Dragonieri S, Italy

Received: August 25, 2022

Peer-review started: August 25, 2022

First decision: December 20, 2022

Revised: December 29, 2022

Accepted: January 10, 2023

Article in press: January 10, 2023

Published online: February 6, 2023



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Abstract

BACKGROUND

Implanted intravenous infusion port (TIAP) is mainly used for patients who need central venous infusion and poor peripheral vascular conditions. With the advantages of easy to carry, long maintenance cycle, few complications and excellent quality of life, it has been widely used in the fields of malignant tumor chemotherapy, parenteral nutrition support and repeated blood collection. Implanted intravenous infusion port (IVAP) dislocation can have significant complications if not recognised and reinstated immediately.

CASE SUMMARY

A 24-year-old man was treated with adjuvant chemotherapy for osteosarcoma. Severe displacement of IVAP catheter was found by chest X-ray examination. The IVAP cannot be used normally. Therefore, we conducted an emergency procedure to reset the catheter through double pigtail catheters, the operation was successful and the infusion port was restored.

CONCLUSION

When IVAP catheter displacement cannot be reset by conventional techniques, two pigtail catheters can be successfully used instead.

Key Words: Catheter; Displaced catheter; Implantable; Implanted intravenous infusion port; Pigtail catheter; Case report

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Core Tip: In the face of serious ectopic infusion port, we successfully solved the problem with double pig tail catheter.

Citation: Liu Y, Du DM. Double pigtail catheter reduction for seriously displaced intravenous infusion port catheter: A case report. *World J Clin Cases* 2023; 11(4): 883-887

URL: <https://www.wjgnet.com/2307-8960/full/v11/i4/883.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v11.i4.883>

INTRODUCTION

Implanted intravenous infusion port (IVAP) catheters are mainly used for patients who need central venous infusion therapy and have poor peripheral vascular conditions. It has been widely used in malignant tumour chemotherapy, parenteral nutrition support treatment, and repeated blood collection in various nations because of the benefits of easy carrying, extended maintenance time, few complications, and excellent quality of life. Inadequate care can lead to complications such as catheter displacement, obstruction, infection, pneumothorax, haemothorax, vascular damage, thrombus, and catheter rupture[1-4]. Among them, catheter displacement of the infusion port has become a critical complication as it affects the chemotherapy effect on patients and it can be life-threatening if the displacement is not recognised and repositioned promptly.

We describe a case with catheter displacement that could not be solved by conventional procedures which is a single pig tail catheter reduction or surgical removal of the port. Hence, we used the double pigtail catheters to reset the displaced catheter. Such interventional reduction surgery is rarely reported.

CASE PRESENTATION

Chief complaints

Our patient was a 24-year-old male with osteosarcoma at the distal end of the left calf. After the second chemotherapy round, the patient developed severe cough and vomiting, and it was difficult to push the catheter when using normal saline. Chest X-ray showed that the catheter had been displaced into a loop.

History of present illness

Osteosarcoma following chemotherapy.

History of past illness

On December 23, 2021, the patient experienced resection of a lesion of the distal left fibula, ankle fusion and microwave ablation.

Personal and family history

The patient denied having any specific family or personal history of any illnesses.

Physical examination

The patient's vital signs at the point of presentation were 36.4°C for body temperature, 114/73 mmHg for blood pressure, 96 beats per minute for pulse, and 20 breaths per minute for respiratory rate. During the physical examination, the patient cooperated and was conscious. A 15-cm surgical incision in the left leg was visible, skin temperature was normal, the plantar flexion and extension of the left ankle were limited, and movement and sensation of the left lower limb were normal.

Laboratory examinations

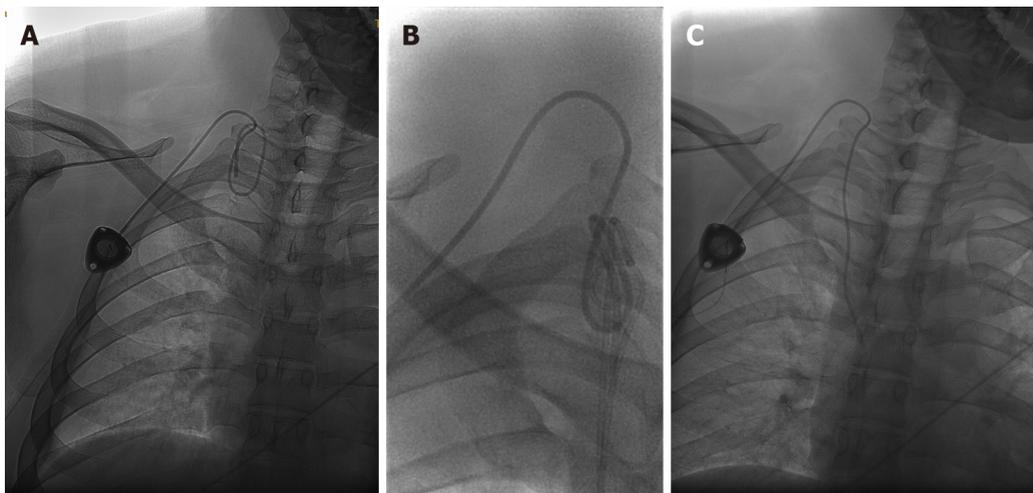
D-dimer dynamic: 0.57 mg/L.

Imaging examinations

Chest X-ray indicated that the catheter was displaced into a loop (Figure 1A).

FINAL DIAGNOSIS

The final diagnosis result is that ectopic catheter in infusion port.



DOI: 10.12998/wjcc.v11.i4.883 Copyright ©The Author(s) 2023.

Figure 1 X-ray found severe ectopic infusion port. A: Preoperative examination revealed severe ectopic infusion port; B: Intraoperative film, two 5F pigtail catheters used to reposition the ectopic infusion port catheter; C: The ectopic infusion port catheter has been successfully reset, and the end of the catheter in the inferior margin of the 5th posterior rib.

TREATMENT

After consulting with the appropriate departments, we prepared to reset the IVAP using an interventional approach. The patient lay flat on the digital subtraction angiography examination bed during the procedure. Digital subtraction angiography fluoroscopy showed that the catheter was displaced into a loop. We used the modified Seldinger puncture to puncture the right femoral vein, and 5F vascular sheath was successfully implanted. Using a long exchange guide wire, we guided the 5F pigtail catheter (Yixinda SCW-StraightPigtail-05110) to the right jugular vein, through the natural bending at the front end of the catheter, trapped the middle and long section of the infusion port catheter, and reset the infusion port catheter by slightly rotating and pulling down[5,6]. Due to the severe displacement of the infusion tube, we failed to reset the catheter using one pigtail. Therefore, we used the same method to puncture the left femoral vein and successfully reset the displaced infusion port catheter using the double pigtail catheter (Figure 1B and C).

OUTCOME AND FOLLOW-UP

Post-operation, the patient did not complain of discomfort and successfully completed the third chemotherapy in the ward.

DISCUSSION

IVAP chemotherapy can give patients continuous venous access and shield their peripheral blood vessels from harm from irritating medications[7]. Because of the benefits of easy carrying, long maintenance period, few complications and high quality of life of patients, it has been widely used in malignant tumour chemotherapy, parenteral nutrition support treatment and repeated blood collection. Increased attention has been paid to complications related to transfusion port such as thrombosis, infection, displacement, pneumothorax and others. Among them, the displacement of transfusion port pipeline is a significant complication of transfusion port implantation, as it affects chemotherapy effectivity and can be life threatening[8]. Catheter displacement may be caused by: (1) A catheter that is too short, and its end position is 1/3 above the superior vena cava; (2) strenuous exercise of the arm or shoulder; (3) severe cough; and (4) repeated vomiting. The catheter displacement in our patient may have been due to repeated vomiting during the second chemotherapy session[9,10].

CONCLUSION

When the catheter is displaced into a loop, the general interventional reduction surgery may not be sufficient to reset the displaced catheter. Thus, we can adopt the method of co-reduction using double

pigtails to increase the traction force of the catheter reduction and make the pull-down force stronger.

ACKNOWLEDGEMENTS

We thank the patient for participating in the study and for agreeing to undergo follow-ups.

FOOTNOTES

Author contributions: Liu Y carried out the study, participated in data collection, and drafted the manuscript; Du DM performed statistical analysis and participated in study design and participated in the acquisition, analysis, and interpretation of the data, and drafted the manuscript; all authors read and approved the final manuscript.

Supported by Shenzhen Key Medical Discipline Construction Fund, No. SZXK052.

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

Conflict-of-interest statement: All 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).

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S-Editor: Liu JH

L-Editor: A

P-Editor: Liu JH

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