

World Journal of *Clinical Cases*

World J Clin Cases 2019 October 26; 7(20): 3168-3383



**OPINION REVIEW**

- 3168** Clinical use of low-dose aspirin for elders and sensitive subjects
Zhang Y, Fang XM, Chen GX

ORIGINAL ARTICLE**Retrospective Study**

- 3175** Distribution and drug resistance of pathogenic bacteria in emergency patients
Huai W, Ma QB, Zheng JJ, Zhao Y, Zhai QR
- 3185** Comparative analysis of robotic vs laparoscopic radical hysterectomy for cervical cancer
Chen L, Liu LP, Wen N, Qiao X, Meng YG
- 3194** Feasibility of laparoscopic isolated caudate lobe resection for rare hepatic mesenchymal neoplasms
Li Y, Zeng KN, Ruan DY, Yao J, Yang Y, Chen GH, Wang GS
- 3202** Rh-incompatible hemolytic disease of the newborn in Hefei
Bi SH, Jiang LL, Dai LY, Zheng H, Zhang J, Wang LL, Wang C, Jiang Q, Liu Y, Zhang YL, Wang J, Zhu C, Liu GH, Teng RJ
- 3208** Soft tissue release combined with joint-sparing osteotomy for treatment of cavovarus foot deformity in older children: Analysis of 21 cases
Chen ZY, Wu ZY, An YH, Dong LF, He J, Chen R

Observational Study

- 3217** Clinical characteristics of sentinel polyps and their correlation with proximal colon cancer: A retrospective observational study
Wang M, Lu JJ, Kong WJ, Kang XJ, Gao F

Prospective Study

- 3226** Longitudinal observation of intraocular pressure variations with acute altitude changes
Xie Y, Sun YX, Han Y, Yang DY, Yang YQ, Cao K, Li SN, Li X, Lu XX, Wu SZ, Wang NL

Randomized Controlled Trial

- 3237** Combination of propofol and dezocine to improve safety and efficacy of anesthesia for gastroscopy and colonoscopy in adults: A randomized, double-blind, controlled trial
Li XT, Ma CQ, Qi SH, Zhang LM

META-ANALYSIS

- 3247** Prognostic significance of malignant ascites in gastric cancer patients with peritoneal metastasis: A systemic review and meta-analysis
Zheng LN, Wen F, Xu P, Zhang S

CASE REPORT

- 3259** Gonadotrophin-releasing hormone agonist-induced pituitary adenoma apoplexy and casual finding of a parathyroid carcinoma: A case report and review of literature
Triviño V, Fidalgo O, Juane A, Pombo J, Cordido F
- 3267** Constrictive pericarditis as a cause of refractory ascites after liver transplantation: A case report
Bezjak M, Kocman B, Jadrijević S, Gašparović H, Mrzljak A, Kanižaj TF, Vujanić D, Bubalo T, Mikulić D
- 3271** Endoluminal closure of an unrecognized penetrating stab wound of the duodenum with endoscopic band ligation: A case report
Kim DH, Choi H, Kim KB, Yun HY, Han JH
- 3276** Spontaneous superior mesenteric artery dissection following upper gastrointestinal panendoscopy: A case report and literature review
Ou Yang CM, Yen YT, Chua CH, Wu CC, Chu KE, Hung TI
- 3282** Hepatic amyloidosis leading to hepatic venular occlusive disease and Budd-Chiari syndrome: A case report
Li TT, Wu YF, Liu FQ, He FL
- 3296** De Winter syndrome and ST-segment elevation myocardial infarction can evolve into one another: Report of two cases
Lin YY, Wen YD, Wu GL, Xu XD
- 3303** Next generation sequencing reveals co-existence of hereditary spherocytosis and Dubin-Johnson syndrome in a Chinese girl: A case report
Li Y, Li Y, Yang Y, Yang WR, Li JP, Peng GX, Song L, Fan HH, Ye L, Xiong YZ, Wu ZJ, Zhou K, Zhao X, Jing LP, Zhang FK, Zhang L
- 3310** Recognizable type of pituitary, heart, kidney and skeletal dysplasia mostly caused by SEMA3A mutation: A case report
Hu F, Sun L
- 3322** Repeated lumps and infections: A case report on breast augmentation complications
Zhang MX, Li SY, Xu LL, Zhao BW, Cai XY, Wang GL
- 3329** Severe mental disorders following anti-retroviral treatment in a patient on peritoneal dialysis: A case report and literature review
He QE, Xia M, Ying GH, He XL, Chen JH, Yang Y

- 3335** Fish bone-induced myocardial injury leading to a misdiagnosis of acute myocardial infarction: A case report
Wang QQ, Hu Y, Zhu LF, Zhu WJ, Shen P
- 3341** Potentially fatal electrolyte imbalance caused by severe hydrofluoric acid burns combined with inhalation injury: A case report
Fang H, Wang GY, Wang X, He F, Su JD
- 3347** Ureter - an unusual site of breast cancer metastasis: A case report
Zhou ZH, Sun LJ, Zhang GM
- 3353** Alternative technique to save ischemic bowel segment in management of neonatal short bowel syndrome: A case report
Geng L, Zhou L, Ding GJ, Xu XL, Wu YM, Liu JJ, Fu TL
- 3358** Sister Mary Joseph's nodule in endometrial carcinoma: A case report
Li Y, Guo P, Wang B, Jia YT
- 3364** Synchronous quadruple primary malignancies of the cervix, endometrium, ovary, and stomach in a single patient: A case report and review of literature
Wang DD, Yang Q
- 3372** Ureteral Ewing's sarcoma in an elderly woman: A case report
Li XX, Bi JB
- 3377** Anaplastic lymphoma kinase-negative anaplastic large cell lymphoma masquerading as Behcet's disease: A case report and review of literature
Luo J, Jiang YH, Lei Z, Miao YL

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Faycal Lakhdar, MD, Professor, Department of Neurosurgery, University Hospital Center of Fes, University Sidi Mohammed Ben Abdellah, FES 10000, Morocco

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 PubMed, PubMed Central, Science Citation Index Expanded (also known as SciSearch®), and Journal Citation Reports/Science Edition. The 2019 Edition of Journal Citation Reports cites the 2018 impact factor for WJCC as 1.153 (5-year impact factor: N/A), ranking WJCC as 99 among 160 journals in Medicine, General and Internal (quartile in category Q3).

RESPONSIBLE EDITORS FOR THIS ISSUE

Responsible Electronic Editor: Ji-Hong Liu

Proofing Production Department Director: Yun-Xiaojuan Wu

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, Bao-Gan Peng, Sandro Vento

EDITORIAL BOARD MEMBERS

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

EDITORIAL OFFICE

Jin-Lei Wang, Director

PUBLICATION DATE

October 26, 2019

COPYRIGHT

© 2019 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

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

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjnet.com/bpg/gerinfo/240>

PUBLICATION MISCONDUCT

<https://www.wjnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Repeated lumps and infections: A case report on breast augmentation complications

Ming-Xuan Zhang, Shi-Yan Li, Li-Long Xu, Bo-Wen Zhao, Xiao-Yan Cai, Guang-Lan Wang

ORCID number: Ming-Xuan Zhang (0000-0001-9371-793X); Shi-Yan Li (0000-0003-3574-7932); Li-Long Xu (0000-0002-1830-5246); Bo-Wen Zhao (0000-0003-4911-9371); Xiao-Yan Cai (0000-0002-2347-9021); Guang-Lan Wang (0000-0003-3878-3955).

Author contributions: Zhang MX reviewed the literature and contributed to manuscript drafting; Xu LL and Zhao BW were responsible for the revision of the manuscript for important intellectual content; Li SY was the patient's sonographer and reviewed the literature; Cai XY was the patient's surgeon and contributed to the manuscript drafting; Wang GL presented the patient's pathology picture and interpreted the imaging findings. All authors issued final approval for the version to be submitted.

Supported by Zhejiang Provincial Medical and Health Platform Project, No. 2018275889.

Informed consent statement: Written informed 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).

Open-Access: This article is an

Ming-Xuan Zhang, Shi-Yan Li, Li-Long Xu, Bo-Wen Zhao, Department of Diagnostic Ultrasound and Echocardiography, Sir Run Run Shaw Hospital, Zhejiang University College of Medicine, Hangzhou 310016, Zhejiang Province, China

Xiao-Yan Cai, General Surgical Department, Sir Run Run Shaw Hospital, Zhejiang University College of Medicine, Hangzhou 310016, Zhejiang Province, China

Guang-Lan Wang, Pathology Department, Sir Run Run Shaw Hospital, Zhejiang University College of Medicine, Hangzhou 310016, Zhejiang Province, China

Corresponding author: Li-Long Xu, MD, Attending Doctor, Department of Diagnostic Ultrasound and Echocardiography, Sir Run Run Shaw Hospital, Zhejiang University College of Medicine, No. 3, East Qingchun Road, Hangzhou 310016, Zhejiang Province, China. 3406047@zju.edu.cn

Telephone: +86-0571-86006331

Fax: +86-0571-86006331

Abstract

BACKGROUND

Polyacrylamide hydrogel (PAAG) injections were once common in breast augmentation and have been prohibited for augmentation mammoplasty in China since a large number of patients who underwent breast augmentation with PAAG injections have continued to seek medical advice as a result of related complications. Among all these complications, distant migration is relatively rare.

CASE SUMMARY

A 49-year-old female presented at the hospital with a one-year history of a vulvar lump. The sonography of the lump showed several subcutaneous fluid-filled regions from the left vulva to the pubic symphysis, which suggested possible fat liquefaction. An enhanced magnetic resonance imaging (MRI) revealed a cystic area, which was considered a benign lesion. Intraoperative observations showed that the mass did not have an obvious capsule, the subcutaneous tissue presented as a cavity, and some yellow material came out of this cavity. A culture of the drainage did not show bacterial contamination. Histopathology revealed a foreign body granuloma. After resection and closed drainage, lumps were successively observed in the left lower abdomen and the bilateral hypochondriac region with infections. Sonography found that the hypoechoic areas in the bilateral hypochondriac region seemed continuous with deep in the breasts. The patient reported that she had undergone surgery with PAAG injections 20 years ago after she was repeatedly asked about her past history. Finally, a diagnosis of distant migration of PAAG was made.

open-access article which was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution Non Commercial (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: <http://creativecommons.org/licenses/by-nc/4.0/>

Manuscript source: Unsolicited manuscript

Received: May 5, 2019

Peer-review started: May 5, 2019

First decision: September 9, 2019

Revised: September 22, 2019

Accepted: September 25, 2019

Article in press: September 25, 2019

Published online: October 26, 2019

P-Reviewer: Gabriel S, Santiago FR

S-Editor: Zhang L

L-Editor: Wang TQ

E-Editor: Liu JH



CONCLUSION

PAAG gel can migrate after long periods of time. A diagnosis should not be limited to the area where the symptom develops.

Key words: Breast augmentation; Distant migration; Repeated lump; Repeated infection; Case report

©The Author(s) 2019. Published by Baishideng Publishing Group Inc. All rights reserved.

Core tip: Among the complications of PAAG injections, distant migration is relatively rare. Symptoms at presentation depend on the course and sometimes may be misdiagnosed. Here, we present a rare case of a patient who repeatedly presented with lumps and infections, without bacterial contamination or an obvious histopathologic explanation. This case shows that PAAG gel can migrate after long periods of time, and debridement surgery may be necessary even without symptoms. It took four months to make an accurate diagnosis since the patient did not disclose her history, which serves as a reminder not to limit our diagnostic ideas to the symptomatic area.

Citation: Zhang MX, Li SY, Xu LL, Zhao BW, Cai XY, Wang GL. Repeated lumps and infections: A case report on breast augmentation complications. *World J Clin Cases* 2019; 7(20): 3322-3328

URL: <https://www.wjgnet.com/2307-8960/full/v7/i20/3322.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v7.i20.3322>

INTRODUCTION

Polyacrylamide hydrogel (PAAG) injections were once prevalent in breast augmentation and have been prohibited for augmentation mammoplasty in China since a large number of patients whose breasts were augmented with PAAG injections have continued to seek medical advice as a result of related complications. Reports of unfavorable results causing debridement operations are rare; however, with an increasing number of complications, PAAG injections have been shown to be potentially dangerous, causing substantial irreversible damage to the breasts of previously healthy women^[1,2]. The exact number of patients who underwent PAAG injections in breast augmentation remains unclear, but approximately 300000 women are estimated to have undergone this procedure^[3].

The reported complications^[4] following PAAG injections for augmentation mammoplasty include swelling, pain, subcutaneous nodules, infection and gel migration. Among all these complications, local migration is common and can be easily diagnosed. However, distant migration is relatively rare. The symptoms at presentation depend on the course, and these symptoms may sometimes be misdiagnosed. Here we present a rare case of a patient who repeatedly presented lumps and infection, without bacterial contamination and obvious histopathologic explanations. The aim of this case report is to highlight this unusual complication to avoid incorrect diagnosis and to provide more insights for clinical diagnosis.

CASE PRESENTATION

Chief complaints

A 49-year-old female presented at the hospital with a one-year history of a vulvar lump with swelling and was admitted to the general surgical department.

History of the present illness

The patient found a vulvar lump a year ago with swelling and tenderness, which had recently gradually increased.

History of past illness

There was a past history of cervical conization 8 years ago. There was no history of diabetes or hypertension and no family history.

Physical examination

On physical examination, the lump was tender and was as large as a finger. The patient's temperature was 36.7 °C, with a pulse rate of 82 beats/min and a respiration rate of 19/min; the patient's blood pressure was 14.1/9.6 kPa.

Laboratory examinations

Hepatitis B surface antigen (HbsAg; 6.48 S/CO; reference range: < 1.00 S/CO) and hepatitis B core antibody (HbcAb, 15.52 U/L, reference range < 10.00 U/L) results were positive. Blood analysis, biochemical tests, coagulation function, renal function, tumor markers, syphilis, HIV tests, and other tests showed no obvious abnormalities.

Imaging examinations

An initial imaging evaluation by sonography (Figure 1) showed several subcutaneous fluid-filled regions from the left vulva to the pubic symphysis that were multilocular and mobile. The largest lump was 6.11*1.84*2.62 cm, and all of these fluid-filled regions were considered possible fat liquefaction. The lump was further evaluated by a pelvic cavity magnetic resonance imaging (MRI) scan. This scan revealed a cystic area (Figure 2), which was considered a benign lesion, including lymphangioma.

Further diagnostic work-up

The resection of the vulvar mass and closed drainage were conducted. Intraoperative observations showed that the mass did not have an obvious capsule, and its boundaries were unclear. The subcutaneous tissue presented as a cavity, and yellow material, similar to bean dregs, came out of the cavity (Figure 3). Histopathology revealed that the tissue was composed of a foreign-body granuloma (Figure 4). She was discharged on first postoperative day. Three weeks postoperatively, the patient was hospitalized as a result of fever and chills, with a peak temperature of 38.7 °C. The wound was healing slowly, and the left lower abdominal wall was swollen, tender, and hot. A blood test showed that high-sensitivity C-reactive protein (84.6 mg/L), neutrophil granulocytes ($21.8 \times 10^9/L$) and white blood cells ($23.4 \times 10^9/L$) were obviously increased. Additionally, an abdominal CT scan indicated extensive infiltration and effusion from the left hypochondriac region to the vulva, mostly in the left lower abdomen, and postoperative changes were suspected (Figure 5). Subsequently, the patient underwent local drainage with an 8F "pigtail" tube. The drainage fluid seemed similar to that of the last time. The drainage culture showed no bacterial contamination. Then, the patient was discharged with decreasing effusion.

However, she was readmitted to the hospital a month later, reporting the swelling of the bilateral chest wall with fever. The highest temperature was 37.8 °C, and the blood test was similar to that at the last admission, with increased high-sensitivity C-reactive protein (48.5 mg/L), neutrophil granulocytes ($9.65 \times 10^9/L$), and white blood cells ($11.6 \times 10^9/L$). The sonography of the bilateral hypochondriac area revealed a hypochoic area on each side shaped like bars (Figure 6). The size of the left region was 21.95*2.32*9.59 cm, and the size of the right region was 12.28*1.30*12.01 cm. Both hypochoic areas seemed continuous with deep in the breasts. The patient reported that she had hid the fact that she had undergone breast augmentation surgery with PAAG injections 20 years ago until she was repeatedly asked about her past history by an ultrasound doctor.

FINAL DIAGNOSIS

Finally, based on the history and the repeated lumps and infection, a diagnosis of distant migration of PAAG was made.

TREATMENT

The patient refused surgery and was then treated with anti-inflammatory therapies and drainage.

OUTCOME AND FOLLOW-UP

After 6 months of follow-up, the patient's condition was stable.

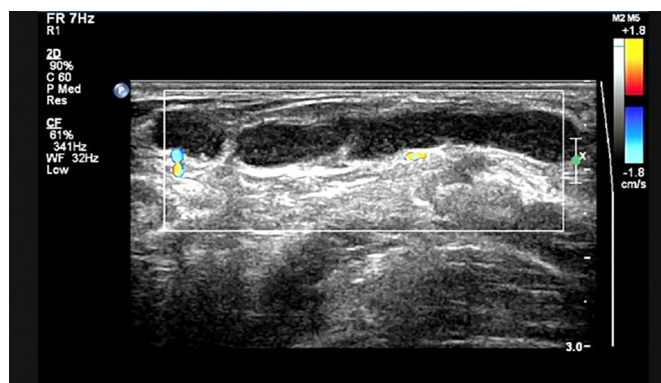


Figure 1 Ultrasound scan showing one of the subcutaneous fluid-filled regions from the left vulva to pubic symphysis that was multilocular and mobile.

DISCUSSION

Based on the fluidity of PAAG and the thin fibrous capsule surrounding the gel, the injected PAAG breaks down under certain conditions, including pressure, gravity, trauma, and massage, which may accelerate gel migration by disrupting the fibrous capsule.

PAAG injections are performed mostly in retromammary space, where the structure is loose. PAAG can move down the surface of the chest muscles to lower areas through the retromammary space. The distant migration in this patient appeared after a long period of time and was combined with infection after drainage. A chronic cavity formed once the PAAG reached the vulva and was maintained for prolonged periods. The drainage in this case did not resemble the drainage that is typically reported in the literature, which is thick, yellow, granular, and colloid with small transparent particles^[5,6]. This may be the reason that inflammatory cells infiltrated the area and broke down the original structure.

Breast duct injury and perioperative contamination during gel injection were believed to play an essential part in infection. In this case, the vulvar mass resection exposed the wound to streams of PAAG, which we speculate may have been the reason of repeated infections. Although microorganisms can grow easily in gel solutions and can move when the gel migrates, the culture of the drainage showed no bacterial contamination in this case, and the swelling and fever may have been due to an inflammatory reaction to the foreign body.

Some scholars^[7,8] believe that patients with PAAG injections without complications do not need treatment. However, in this case, even after 20 years, the gel was still able to migrate and cause an infection; thus, treatment may need to be reconsidered. Although there are no standard therapeutic regimens, timely debridement surgery may be the most effective treatment for complications currently^[4,9-11].

It is noteworthy that it took four months to accurately diagnose this patient. Female patients, especially in China, may hide their history about their sex life and breast augmentation due to embarrassment or because they do not believe that it is associated with diseases, which makes diagnosis more difficult. It is important not to limit diagnostic possibilities to the place where the symptoms are located. In this case, lumps appeared three times in different parts of the body, and it is remarkable that each lump appeared higher on the body than the previous one. The symptoms and examination results were not typical enough to make the correct diagnosis, but the regular change of location could serve as a diagnostic clue for a high lesion.

CONCLUSION

PAAG gel can migrate after extended periods of time. Timely debridement surgery may be necessary even when symptoms are not present after polyacrylamide hydrogel injection. Diagnostic possibilities should not be limited to the place where the symptom is located.

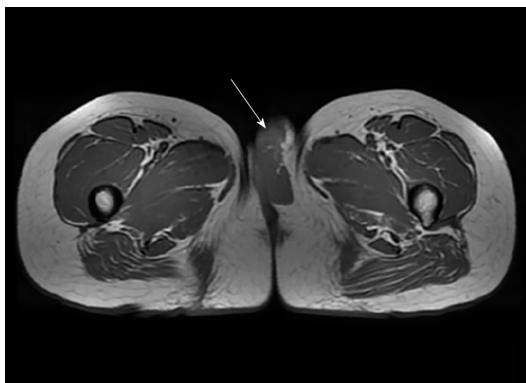


Figure 2 Pelvic enhanced nuclear magnetic resonance scan revealing a cystic area in the left vulva, as shown by the arrow.

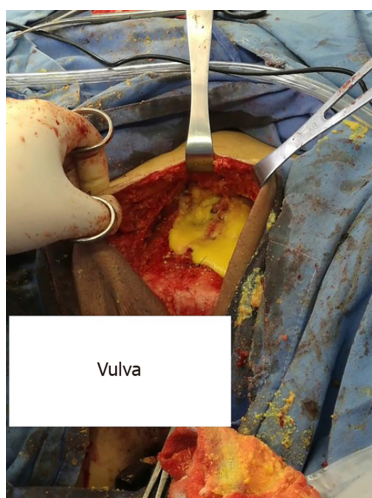


Figure 3 Yellow material that resembled bean dregs without an obvious capsule was found during surgery.

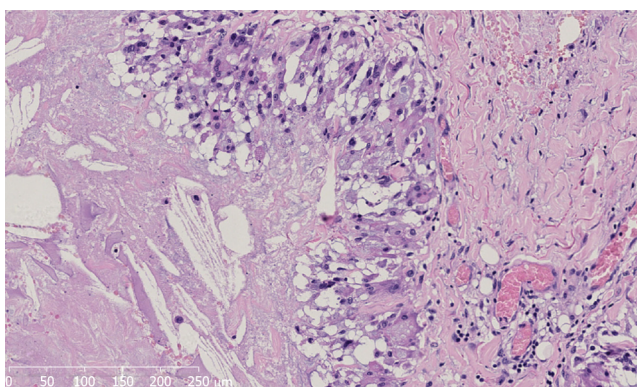


Figure 4 Microscopic appearance of the gray-white and gray-yellow tissue revealed dilated or fissured interconnected cysts with pseudopapillary structures. The cyst wall was composed of fibrous tissue with hyaline degeneration. There are many tissue cells and foreign body giant cells in the inner wall (hematoxylin and eosin staining; original magnification: 200×).



Figure 5 An abdominal computed tomography scan showed extensive infiltration and effusion from the left hypochondriac region to the vulva, as indicated by the arrow.

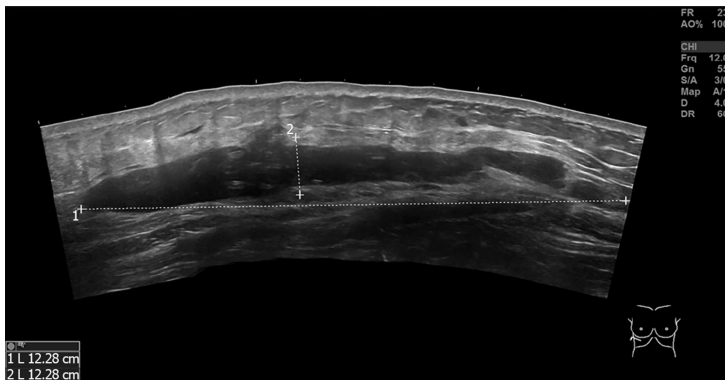


Figure 6 Ultrasonography of the bilateral hypochondriac region demonstrating that there was a hypoechoic area shaped like a bar on each side.

ACKNOWLEDGEMENTS

Ming-Xuan Zhang wishes to thank Wen-Qi Zhang and Huan Zhang for their support over the past decade.

REFERENCES

- 1 **Qiao Q**, Wang X, Sun J, Zhao R, Liu Z, Wang Y, Sun B, Yan Y, Qi K. Management for postoperative complications of breast augmentation by injected polyacrylamide hydrogel. *Aesthetic Plast Surg* 2005; **29**: 156-61; discussion 162 [PMID: 15948018 DOI: 10.1007/s00266-004-0099-0]
- 2 **Ghasemi HM**, Damsgaard TE, Stolle LB, Christensen BO. Complications 15 years after breast augmentation with polyacrylamide. *JPRAS Open* 2015; **4**: 30-34 [DOI: 10.1016/j.jpra.2015.04.002]
- 3 **Wang Z**, Li S, Wang L, Zhang S, Jiang Y, Chen J, Luo D. Polyacrylamide hydrogel injection for breast augmentation: another injectable failure. *Med Sci Monit* 2012; **18**: CR399-CR408 [PMID: 22648256 DOI: 10.12659/msm.882910]
- 4 **Luo SK**, Chen GP, Sun ZS, Cheng NX. Our strategy in complication management of augmentation mammoplasty with polyacrylamide hydrogel injection in 235 patients. *J Plast Reconstr Aesthet Surg* 2011; **64**: 731-737 [PMID: 21074506 DOI: 10.1016/j.bjps.2010.10.004]
- 5 **Ibrahim RM**, Lauritzen E, Krammer CW. Breastfeeding difficulty after polyacrylamide hydrogel (PAAG) mediated breast augmentation. *Int J Surg Case Rep* 2018; **47**: 67-70 [PMID: 29730514 DOI: 10.1016/j.ijscr.2018.04.025]
- 6 **Jin R**, Luo X, Wang X, Ma J, Liu F, Yang Q, Yang J, Wang X. Complications and Treatment Strategy After Breast Augmentation by Polyacrylamide Hydrogel Injection: Summary of 10-Year Clinical Experience. *Aesthetic Plast Surg* 2018; **42**: 402-409 [PMID: 29124374 DOI: 10.1007/s00266-017-1006-9]
- 7 **Margolis NE**, Bassiri-Tehrani B, Chhor C, Singer C, Hernandez O, Moy L. Polyacrylamide gel breast augmentation: report of two cases and review of the literature. *Clin Imaging* 2015; **39**: 339-343 [PMID: 25670236 DOI: 10.1016/j.clinimag.2014.12.008]
- 8 **Leung KM**, Yeoh GP, Chan KW. Breast pathology in complications associated with polyacrylamide hydrogel (PAAG) mammoplasty. *Hong Kong Med J* 2007; **13**: 137-140 [PMID: 17406041]
- 9 **Chen B**, Song H. Management of Breast Deformity After Removal of Injectable Polyacrylamide Hydrogel: Retrospective Study of 200 Cases for 7 Years. *Aesthetic Plast Surg* 2016; **40**: 482-491 [PMID: 27251750 DOI: 10.1007/s00266-016-0646-5]
- 10 **Zemskov VS**, Zavgorodnii IA, Roshchina LA, Fedoruk VI, Zemskova MV, Kolomatskaia LB, Slivka VP.

- Endoprosthesis of mammary glands using hydrogel prosthesis PAAG “Interfall”. *Klin Khir* 2000; 23-24 [PMID: [11288272](#)]
- 11 **Unukovych D**, Khrapach V, Wickman M, Liljegren A, Mishalov V, Patlazhan G, Sandelin K. Polyacrylamide gel injections for breast augmentation: management of complications in 106 patients, a multicenter study. *World J Surg* 2012; **36**: 695-701 [PMID: [21932147](#) DOI: [10.1007/s00268-011-1273-6](#)]



Published By Baishideng Publishing Group Inc
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-2238242
E-mail: bpgoffice@wjgnet.com
Help Desk: <https://www.f6publishing.com/helpdesk>
<https://www.wjgnet.com>

