

Case Report

Long term complications following polyacrylamide hydrogel breast augmentation: a case report and review of the literature

Justin J. Weller*

Department of Vascular Surgery, Gold Coast Health Service, Queensland, Australia

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*Correspondence:

Dr. Justin J Weller,

E-mail: weller.justinj@gmail.com

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ABSTRACT

Complications from Polyacrylamide hydrogel breast augmentation (PHBA) are a rare cause for presentation in Australia. I reviewed the literature and analysed our institutional experience in order to familiarise clinicians with this rare procedure. I present the case of a 44 year-old female with a three-year history of intermittent right lateral breast pain. She had a background of breast augmentation with Interfall Gel in China in 2000. She was tender over the lateral aspect of her breast which was exacerbated by physical activity. An magnetic resonance imaging (MRI) revealed areas of extravasation bilaterally with no suspicious lesions and the specialist opinion was for close observation in six months. Although a rare presentation, Australia's population has many emigrates from Asian nations and further presentations are to be expected. The literature clearly supports the importance of careful monitoring of these patients, due to the potential for severe complications such as infection, sepsis, breast auto-inflation, significant tenderness and possibly increased risk of breast malignancy. MRI is also crucial in evaluating these cases, namely to rule out malignancy and for pre-operative planning in severe cases. However, the majority of presentations are suitable for careful monitoring.

Keywords: Interfall gel, Breast augmentation, Complications

INTRODUCTION

Polyacrylamide hydrogel breast augmentation (PHBA) complications are a rare cause for presentation in Australia.¹ While complications related to breast augmentation are well recognised, there is a paucity of published literature in the Australian population regarding PHBA complications, as PHBA was not approved for breast augmentation in Australia.

I present the case of a 44 year-old female presenting with complications related to PHBA. I reviewed the literature and analysed previous institutional experience in order to familiarise clinicians with this rare condition through discussion of its clinical presentation, diagnostic considerations and management.

CASE REPORT

This case report details the presentation of a 44 year-old female with a three-year history of intermittent right lateral breast pain. Following breast augmentation surgery, performed in China in 2000, there were no issues till 2014, when the patient began experiencing right lateral chest pain with no signs on physical examination. The patient had undergone bilateral injected Interfall breast augmentation in China in 2000, with no operative details available. An ultrasound revealed a small fluid collection surrounding the patients right implant. She was otherwise well, with no findings on physical examination. The pain resolved following four months of cephalixin but has returned intermittently since. Magnetic resonance imaging (MRI) of the breasts revealed bilateral retromammary implants which were reported as likely to be saline given

the signal intensity on the sequences, however, given the patient history this cannot be confirmed. Most importantly, as can clearly be seen in Figures 1 and 2, extravasation can be demonstrated adjacent to the right breast while the left implant appears normal.

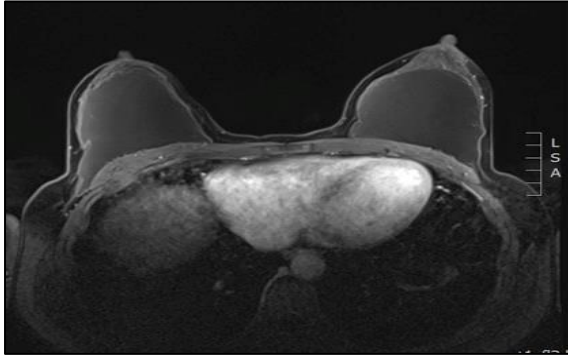


Figure 1: Transverse plane MRI demonstrating bilateral breast implants and deformity of the right implant at 12 and 5 o'clock.

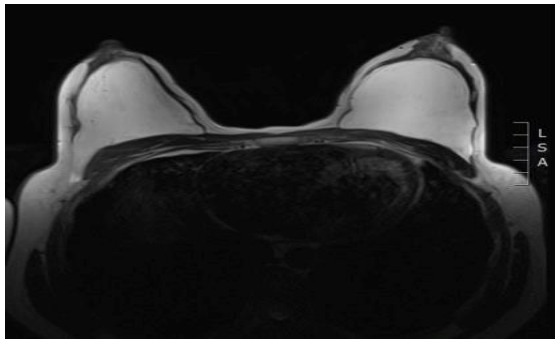


Figure 2: Transverse plane MRI post contrast that highlights fluid extravasation around the right breast implant. Given the signal this is likely saline.

There was no evidence of suspicious breast lesions. It was determined that due to significant surgery being required to remove the implant that careful monitoring was appropriate for this patient and she will be reviewed in six months.

Literature Review

We conducted a thorough review of the English literature on Medline using the keywords 'polyacrylamide hydrogel', 'interfall gel', 'breast', 'augmentation' and 'complications'. The search revealed only 36 studies examining the complications, diagnosis and management of PHBA patients. None of the studies found in this search were in an Australian population.

DISCUSSION

Long-term complications of breast augmentation are well recognised¹ and include capsular contraction, implant rupture and re-operation. However, the long-term

complications following PHBA are not as well recognised. The results of this literature review suggest that the complications following PHBA are more varied and potentially more significant.^{2,3} These include breast tenderness, swelling, infection, breast auto-inflation and debilitating pain. Studies also suggest that there may be increased aggressiveness of breast malignancy in PHBA patients.⁴ A key consideration in PHBA patients is that there are typically no findings on physical examination, which means usually the diagnosis is made by the clinical history and the use of MRI.

The role of imaging in making an accurate diagnosis, in ruling out potential malignancy and in operative planning is emphasised in this literature review. It is suggested that MRI is superior to ultrasound in assessing these patients.⁵ In particular, the studies in this review emphasize that an MRI is essential for pre-operative planning.⁶ In the current case, Figure 1 (pre-contrast) and Figure 2 (post-contrast) demonstrate the usefulness of MRI in PHBA patients. The use of MRI allowed the changes to the right implant, in particular the deformity and adjacent extravasation, showing the likely cause of the patients symptoms, as well as effectively rule out malignant causes and provide information about the nature of the implant. This information is crucial in determining patient prognosis and pre-operative planning.^{5,6}

The focus of most of the studies found in this literature review was on surgical correction of PHBA complications. This should be reserved for severe cases of PHBA complications, particularly chronic infection, breast auto-inflation and severe pain.^{7,8} However, the studies clearly show that given the possible long term effects, careful monitoring is required in all symptomatic patients as was reflected in our case, with six monthly reviews planned.⁸

It is clear from the results of this review that PHBA complication is an extremely rare presentation in Australia, likely reflecting PHBA never being approved for use in Australia. However, Australia has a significant number of immigrants from China, where PHBA was commonly used in the 1990s, highlighting the importance of this presentation.

CONCLUSION

PHBA complication is an extremely rare presentation in Australia. I describe the extremely rare case of a 44 year-old woman presenting with pain secondary to PHBA. This review revealed that there are significant complications associated with PHBA and that an MRI is essential to properly evaluate and manage this condition. Our institutional experience with this case re-enforces the importance of MRI and the use of careful monitoring in select patients.

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