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Breastfeeding difficulty after polyacrylamide hydrogel (PAAG) mediated breast augmentation

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ABSTRACT

INTRODUCTION: Breast augmentation using polyacrylamide hydrogel (PAAG) has been routinely used in the past as a minimal invasive procedure. However, several patients undergoing this procedure have started to report complications. We report a case of breast augmentation using PAAG leading to a delayed infection and breastfeeding complication.

CLINICAL CASE: A 36-year-old Danish female who was treated with PAAG fifteen years earlier, presented with difficulty in breastfeeding and fistulation. Clinical evaluation revealed structural deformity of the right breast and a 5 × 5 mm skin defect. Mammography showed diffuse microcalcification density grade 4. Ultrasound and MRI displayed inhomogeneous gelatinous material in both breasts diffused into the pectoralis major muscle. Initial management involved aspiration of the material. The patient developed infection and was subjected to modified radical debridement removing the PAAG. The patient healed without any further complications.

DISCUSSION: The prevalence of PAAG mediated breast augmentation related complications are increasing. The most prominent complication being late infections, breast hardening and subsequent breastfeeding difficulties. In this case, the difficulty in breastfeeding was induced by the PAAG within the breast tissue. The inhomogeneous gelatinous material was surgically removed leading to complete remission.

CONCLUSION: Long-term complications, among others breast feeding difficulty, in women treated with PAAG are increasing and need appropriate management strategy. PAAG mediated breast augmentation may cause irreversible damage to the breast in healthy women necessitating complex debridement.

1. Introduction

Polyacrylamide hydrogel (PAAG) has been widely used for breast augmentation among women especially in Iran, China and India [1,2]. The technique was developed in 1987 and had broad acceptance up until the millennium. The technique of PAAG breast augmention is described as an aseptic injection of PAAG into the subcutaneous fat, meanwhile sparring the breast tissue, in af fan-like manner [3]. The technique was approved by the China Food and Drug Administration (CFDA) for its broader clinical usage in 1997, but the approval has since been withdrawn [4]. The exact number of patients treated with PAAG in breast augmentation are unknown, but it is estimated that approximately 300,000 women have undergone this procedure [2]. The number of women complaining about the late adverse effects associated with PAAG treatment continues to increase and breastfeeding complications have been reported among several women [5]. Besides breastfeeding difficulties, breast autoinflation, displacement of the injected material, formation of lumps and hematoma have been reported [6]. Patients facing the complications are often left with the choice of debridement surgery [1]. Development of appropriate management strategies to address PAAG associated complications subsequent to augmentation mammoplasty are ongoing [7].

We report a 36-years-old Danish woman with breastfeeding complication due to breast augmentation using PAAG 15 years earlier in Iran. This case report is in line with the SCARE criteria [8].

2. Presentation of case

A 36-year-old Danish female who received breast augmentation with PAAG-injection in Iran 15 years earlier, presented with a 5 × 5 mm skin defect in the upper medial quadrant of the right breast 2 months after giving birth (Fig. 1A). She was unable to breastfeed. Thick, yellow gelatinous material with small transparent particles and necrotic fluid emerged from the defect. Initial examination of the breasts revealed resilience and deformation of

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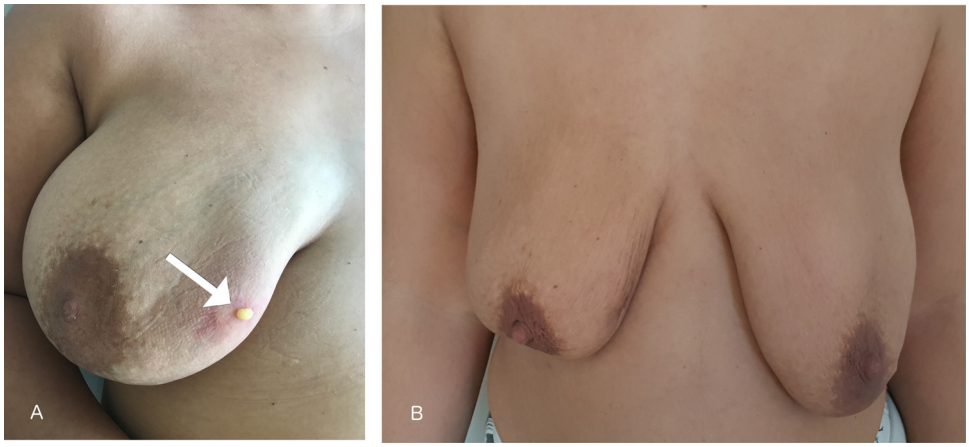

Fig. 1. A: Clinical examination showing a 5 × 5 mm skin defect in the right breast with PAAG fistulation Fig. 1B: Follow up after 3 months.

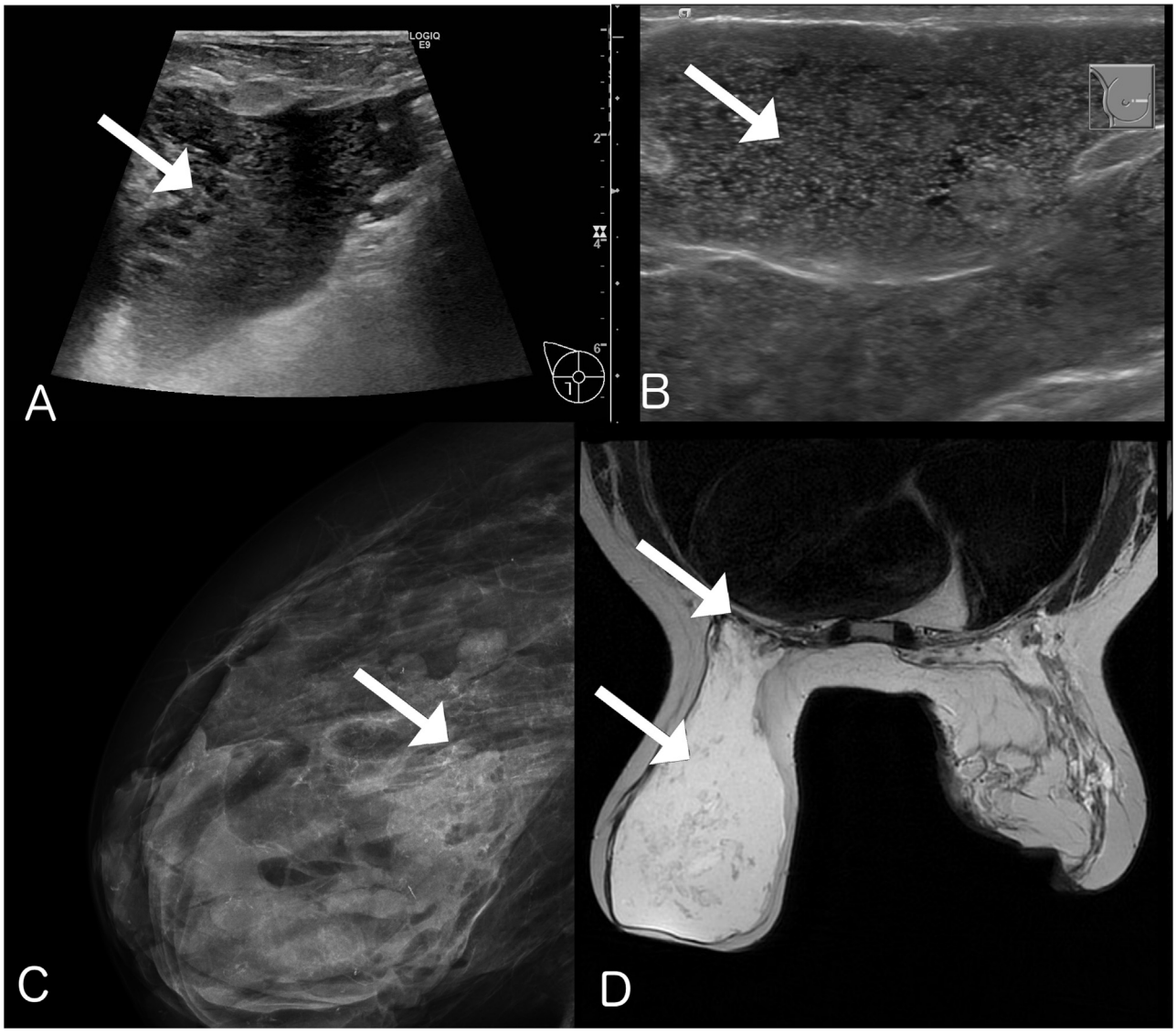

Fig. 2. A: Ultrasound of right breast showing diffuse PAAG in the subcutaneous tissue and breast tissue (Arrow). B: Ultrasound of the left breast showing homogeneous distribution and intact skin (Arrow). C: X-ray of the right breast showing microcalcification in the remaining mammary tissue (Arrow). D: T2-weighted MRI-scan showing distribution of PAAG in both breasts and diffusion through m. pectoralis bilaterally (Arrow).