

# Late Hematoma after Breast Augmentation Surgery: A Case Report<sup>1</sup>

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Hematoma is a common complication that occurs usually during the early postoperative period of breast surgery. A late hematoma is, however, an extremely rare complication following breast augmentation surgery. We report a case of late hematoma triggered by excessive squeezing during sexual activity 2 years after breast augmentation. Ultrasound (US) showed a large, well-circumscribed heterogeneous lesion, partially surrounding the silicone prosthesis. Computed tomography (CT) revealed a huge hematoma around the prosthesis in the left breast associated with active bleeding from the internal mammary artery (IMA).

**Index words :** Breast

Breast Implantation

Complication, Hematoma

Breast augmentation surgery is a world-wide common cosmetic procedure. A hematoma is a well known complication, usually during the first three postoperative days (1, 2). Late complications commonly include capsular contracture and rupture, but a hematoma is extremely rare. A breast hematoma can be caused by blunt trauma, such as a seat belt injury during a traffic accident, but it is also a rare presentation (3). We report a case of late hematoma that occurred 2 years after breast augmentation surgery, along with a review of the literature.

## Case Report

A 35-year-old female presented with sudden enlargement of the left breast. The female subject underwent

bilateral breast augmentation surgery with 200 mL saline-filled silicone prostheses two years prior. She had no complications related to her initial surgery and both breasts remained symmetrical in shape and size until the day before the symptom started. There was no history of trauma but she mentioned, her husband squeezed her breast during sexual activity the previous evening.

At physical examination, the clinician found a marked enlargement of her left breast. The patient presented mild tenderness but there was no heating sensation or redness of the skin. Laboratory tests showed a low hemoglobin level (8.9 g/dL) and low hematocrit (24.8%). The prothrombin time and platelet level was within the normal range.

Ultrasound (US) evaluation was performed. Due to marked enlargement of left breast, a conventional linear US probe was inappropriate to evaluate the lesion. Instead of linear probe, a convex probe was used during the examination. US showed a large, well-circumscribed lesion with heterogeneous echogenicity, which was confined to the lower outer quadrant (LOQ) and lower

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inner quadrant (LIQ) of her left breast (Fig. 1A). The silicone prosthesis was partially surrounded by the large heterogeneous echoic lesion. The margin of the prosthesis showed a slight irregularity, thus suggesting that there might be rupture of the prosthesis. A Doppler US scan revealed that there was no trace of blood flow at the large heterogeneous echoic lesion (Fig. 1B). According to the US findings and the symptoms, we presumed that the patient had a large hematoma with small rupture of the silicon prosthesis in her left breast.

The patient underwent a contrast enhanced computed tomography (CT). The chest CT was performed before

and after the administration of intravenous contrast material. The non-contrast CT scan revealed a large hematoma, which was formed around the left silicone prosthesis and extended to the lower region of the left breast (Fig. 1C). The enhanced CT scan showed an active extravasation of contrast material at the inner portion of the hematoma, which suggested arterial bleeding (Fig. 1D). The patient was diagnosed with a huge hematoma with active arterial bleeding.

Surgical exploration was performed. At the operation field, surgeons confirmed the active arterial bleeding from the left internal mammary artery (IMA) with ap-

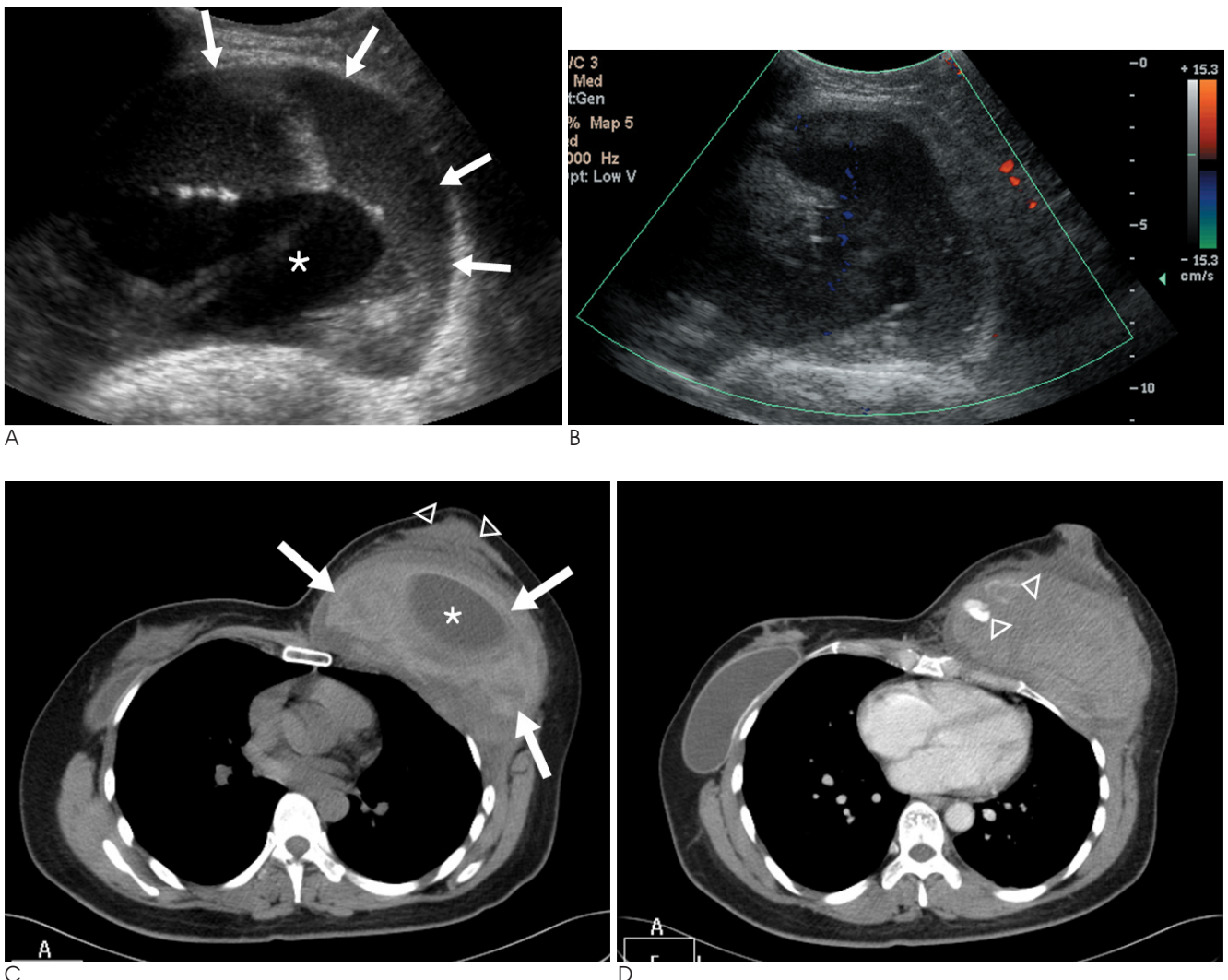


Fig. 1. A 35-year-old woman with a hematoma in the left breast, which occurred two years after bilateral breast augmentation surgery

A. An US scan shows a large, well-circumscribed lesion with heterogenic echogenecity in the lower outer quadrant of the left breast (arrows). The silicone prosthesis (asterisk) is partially surrounded by the large heterogenous lesion.

B. Color Doppler sonography shows no trace of blood flow at the large heterogeneous echoic lesion.

C. Non contrast CT scan reveals a large hematoma (arrows) around the left silicone prosthesis (asterisk). The normal glandular tissue of the breast is displaced anteriorly (arrowheads).

D. Enhanced CT scan shows an extravasation of contrast material (arrowheads) at the inner portion of the hematoma.

proximately 1L of hematoma around the bleeding site and silicone prosthesis. They ligated the bleeding site with vicryl, and then removed the hematoma and silicone prosthesis. The postoperative course was uneventful.

## Discussion

Breast augmentation surgery is a world-wide, common cosmetic procedure. A hematoma is a well known complication during the early postoperative period (1). Hematomas have been reported to occur in 1.5% to 10.3% of individuals having undergone breast augmentation in the early postoperative period; especially in the first few days after surgery (1, 4). However, only about 20 cases of late postoperative complication have been reported in the English literature since the first case report in 1975 by Georgiade et al. (5–7). These cases reported a sudden or chronic hematoma of the breast after 6 months to 22 years after the augmentation surgery, with or without a leading mechanical irritation (6, 7).

Because of the limited number of previously reported cases, definite causes of the late hemorrhage have not been established. Georgiade et al. thought that corticosteroid administration was the cause of the late erosion of the medium-sized artery (5). In polyurethane covered implants, a prolonged inflammatory reaction and increased capillary permeability may be the pathogenesis of late hematomas (2). However, according to an updated report, capsular microfractures with the rigidity of the capsule, preventing the retraction of damaged blood vessels, lead to continued bleeding (7). Mechanical irritation such as squeezing, compression, or blunt trauma on the augmented breast might be the cause of injury on these fragile vessels around the implant, which may cause a late hematoma. In our case and two cases which van Rijssen et al. had reported, the direct triggering factor for hematoma development was caused by squeezing of the breast (7).

Injury to the internal mammary artery is the most common cause of late hematomas after breast augmentation surgery. Braatz et al. described the CT findings of several cases with IMA injury (8). All the four cases were an IMA injury developing from a hematoma of the

anterior mediastinum. a hematoma of the breast can occur as a result of a seat belt injury of the breast of restrained passengers in a traffic accident. There was a case of active arterial bleeding of the breast in a seat belt injury, in which an angiogram revealed the source was a horizontal branch of the internal mammary artery (3). In this case, there was a large hematoma with extravasation of contrast material in the inner portion of the injured breast on CT scan. Therefore, we could presume that the injured vessel of our patient must be perforating branches of the IMA rather than the IMA itself. In this case, the patient underwent flow-directed embolization with a gelatin sponge and a coil, unlike our patient, who underwent exploratory surgery to remove the hematoma and prosthesis.

In summary, late hematoma formation after breast augmentation surgery is a very rare condition but may be a life-threatening. Early evaluation with US and contrast-enhanced CT is very important to document a large hematoma around the silicone prosthesis associated with active arterial bleeding.

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## 유방 확대 수술 후 발생한 후기 혈종: 증례 보고<sup>1</sup>

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혈종은 유방 수술 후 나타날 수 있는 흔한 초기 합병증의 하나이다. 하지만, 유방 확대 수술 후에 나타나는 후기 혈종은 극히 드문 합병증이다. 이에 본 저자들은 유방 확대 수술 시행 2년 후, 성행위 도중의 과도한 압박에 의해 발생한 후기 혈종의 예를 보았기에 보고하고자 한다. 초음파 검사에서 보형물 주위의 경계가 좋은 불균질한 에코를 지닌 병변이 나타났으며, 컴퓨터단층촬영술에서는 내흉동맥의 출혈로 인해 왼쪽 유방의 보형물 주위로 큰 혈종이 형성된 소견을 보였다.