

# Bilateral Chronic Expanding Hematoma 20 Years after Silicone Breast Implant Removal

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**Summary:** We encountered a case of a chronic expanding hematoma (CEH) that occurred bilaterally in the breast regions of a 42-year-old woman approximately 20 years after SBI removal. There have been no other reports of CEH occurring after implant removal. Furthermore, this is also the first case of a CEH that developed bilaterally in the breasts; most reported cases are of a unilaterally developed CEH. A CEH reportedly develops after a long period of time following trauma or surgery. If surgeons encounter an expanding tumor emerging from regions with such a history, they must consider the presence of a CEH even after implant removal, as in the present case. Hematomas caused by trauma or surgery are usually absorbed or are replaced with fibrous tissue. In rare cases, they can chronically increase as CEHs. Herein, we report a case of a CEH that occurred in both breasts approximately 20 years after silicone breast implant removal. (*Plast Reconstr Surg Glob Open* 2022;10:e4205; doi: 10.1097/GOX.0000000000004205; Published online 22 March 2022.)

## CASE PRESENTATION

The patient was a 42-year-old woman who, 20 years before presentation, had undergone a bilateral breast augmentation surgery using silicone breast implants (SBIs). The SBIs were inserted through both axillae. About half a year after the surgery, both implants were removed because of persistent discomfort around the surgical regions.

The patient first visited our department 2 months after she became aware of a mass in her left chest. She had been playing volleyball about three times a week for 5 years before her first visit; however, she denied any obvious trauma to the chest. The patient had no relevant medical history.

During the first visit, a 7×13 cm elastic and constricted subcutaneous mass was palpable in her left chest. Moreover, a 6×6 cm subcutaneous mass was palpable in her right chest (Fig. 1). T1-weighted magnetic resonance imaging (MRI) revealed a well-defined mass with iso-intensity and low-intensity regions, whereas T2-weighted fat-suppressed images revealed low-intensity mosaic

patterns in a high-intensity region (Fig. 2). These findings revealed that the tumors were fluid-containing cystic lesions. Aspiration biopsy cytology was then performed. A dark red liquid was observed, and cytopathology results indicated class 2 and red blood cells +2. Based on these findings and the patient's surgical history, a CEH was suspected.

Subsequently, tumor excision from both sides was planned. The patient had a strong preference for the initial removal of only the left-sided tumor; she wanted to first confirm the breast shape after surgery because the left-sided tumor was larger and more cumbersome to manage. Thus, excision of the left-sided tumor was performed first.

An incision was made along the submammary groove line estimated symmetrically to the right side. A 13×6 cm tumor containing the entire capsule coupled with the pectoralis major fascia (Fig. 3) was removed. Histopathological examination revealed that the capsule of the tumor consisted of dense collagen fiber sequences in the outer layer, loose collagen fiber sequences in the middle layer, and fibrin precipitates and erythrocytes in the inside layer. The histopathological diagnosis was of a CEH.

After excision of the left-sided tumor, the patient refused removal of the right-sided tumor. Four months after the surgery, no CEH recurrence was observed (Fig. 4).

## DISCUSSION

In 1968, Friedlander and Bump first reported CEH as a hematoma in the calf that had expanded over the course of 5 years.<sup>1</sup> In 1980, Reid et al reported six cases

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**Fig. 1.** Physical examination during the patient's first visit. A 7×13 cm protuberant subcutaneous mass in the left chest, and a 6×6 cm subcutaneous mass on the right chest are observed.

of CEH and defined CEH as a hematoma that chronically expanded over a course of 1 month or more.<sup>2</sup> CEH is a cyst with old bloody contents, a fibrotic cyst wall, and a luminal surface containing fibrin precipitation and granulation tissue hyperplasia with a foreign body reaction. Its expansion mechanism is similar to that of chronic subdural hematomas. The inflammatory granulation tissue reaction is believed to cause the formation of a hematoma coat and subsequent exudation of plasma components from the coat, which in turn increases fibrinolysis and causes rebleeding from the microvessels.<sup>3,4</sup>

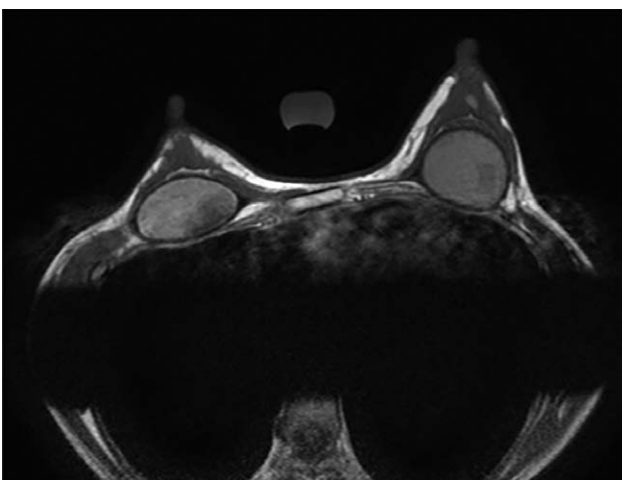
Based on our report in 2008,<sup>5</sup> CEH occurred most frequently in the subcutaneous layer or soft tissues (53% of



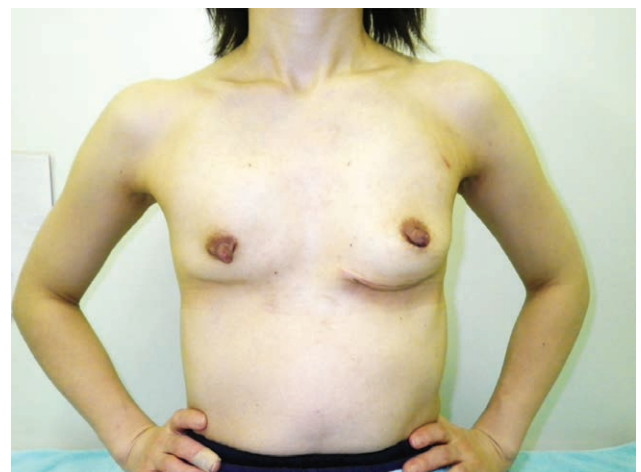
**Fig. 3.** Intraoperative view.

all CEH cases); its next most frequent site of occurrence was the thoracic region. Eighty percent of patients with CEH have a history of trauma or surgery. CEH onset varied from 1 month to 40 years after the causative events.<sup>3</sup> Furthermore, 15 cases of CEH associated with breast augmentation surgeries have been previously reported.<sup>6-8</sup> All of these previous cases have exhibited unilateral occurrence.<sup>6-8</sup> Therefore, the present case is the first case in which a CEH developed bilaterally after SBI removal.

CEH can be caused even by minor injuries or very small impacts.<sup>5</sup> In the present case, despite the lack of direct evidence linking CEH with playing volleyball (such as a clear history of trauma), the mere impact of a



**Fig. 2.** MRI findings. T1-weighted images.



**Fig. 4.** Physical examination 4 months after surgery. The cosmetic results were acceptable. No tumor recurrence was observed.

volleyball on the chest wall could have played a role in the occurrence of CEH.

The differential diagnosis of a CEH includes general soft-tissue tumors. Although CEH is visualized as a cystic lesion with a clear boundary on computed tomography and MRI, the inside of the cyst is not always uniform; it is sometimes difficult to distinguish it from malignant soft-tissue tumors with abundant blood flow on radiological examination. Therefore, histological examination is necessary for a definitive diagnosis. An aspiration biopsy cytological examination before tumor excision is useful for distinguishing between malignant and benign tumors. If this process is still insufficient, an incisional biopsy may be necessary.

In the present case, CEH was suspected preoperatively because of the MRI findings (including a cystic lesion with an internal mosaic pattern), surgical history around the tumors, and results of the aspiration cytological examination. A definitive diagnosis was ultimately reached through histopathological examination of the excised specimen after surgery.

Regarding treatments for CEH, puncture and suction, incision and drainage of contents, and total excision have been previously reported. We believe that total tumor resection should be the first option in cases where the tumor develops subcutaneously. Compared with for tumors arising from the intrathoracic region, this procedure can be completed relatively easily and less invasively for tumors arising subcutaneously because there are no adjoining vital organs in the subcutaneous layers. Furthermore, the residual capsules after puncture or after incision and drainage can cause CEH recurrence.

To summarize, we experienced a case of CEH that occurred in the bilateral breast regions approximately 20 years after SBI removal. Although cases such as this one are rare, we conclude that it is necessary to be vigilant

for potential CEH in this patient population, even after implant removal.

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