

Acute symptomatic hematoma with defined etiology seven years after breast reconstruction: A case report and literature review

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AK Seth, JYS Kim. Acute symptomatic hematoma with defined etiology seven years after breast reconstruction: A case report and literature review. *Can J Plast Surg* 2010;18(2):e27-e29.

Augmentation mammoplasty with implants can be complicated by hematoma formation. The majority of hematomas occur in the immediate postoperative period. There are, however, some reports of hematomas with a delayed presentation. These hematomas in the late postoperative period are rare, and many of these cases do not have a definitive mechanism of injury or develop symptoms immediately after the triggering event. A case of late capsular hematoma seven years after breast reconstruction with a saline implant following mastectomy is presented. In contrast to the majority of published cases, the patient presented with both a known and traceable cause of her bleed and with symptoms that developed immediately after the initial event. Furthermore, the mechanism of her injury was consistent with a bleeding capsular tear that was observed intraoperatively. The present case emphasizes the importance of thorough evaluation and management of patients with a history of breast reconstruction.

Key Words: *Acute; Breast reconstruction; Delayed; Hematoma*

Breast reconstruction or augmentation mammoplasty with implants can be complicated by hematoma formation. Most hematomas occur in the immediate postoperative period; however, there are reports of hematomas with a delayed presentation. Based on the literature, these hematomas in the late postoperative period are rare, with only 20 reported cases (1-16). Moreover, many of these cases do not have a definitive mechanism of injury or develop symptoms immediately after the triggering event. We present a unique case of delayed postoperative hematoma with both a clear traumatic etiology and anatomical basis that resulted in an acute hematoma seven years after breast reconstruction.

CASE PRESENTATION

A 53-year-old woman presented to the emergency department with right breast pain that had begun a few days earlier. The patient had a history of right mastectomy seven years previously for extensive ductal carcinoma in situ with tissue expander reconstruction followed by an exchange for a 600 mL saline implant four months later. She reported having right breast soreness after performing vigorous stretching exercises. The following morning, she noted increased pain and bruising over the medial aspect of the breast. She underwent right breast ultrasound (Figure 1) in the clinic that demonstrated a small fluid collection between the anterior surface of

Un hématome symptomatique aigu à l'étiologie définie sept ans après une reconstruction mammaire : Rapport de cas et analyse bibliographique

L'augmentation mammaire à l'aide d'implants peut être compliquée par la formation d'un hématome. La majorité de ces hématomes se manifestent pendant la période postopératoire immédiate. Cependant, certains rapports font foi de la présence d'hématomes à apparition retardée. Ces hématomes pendant la période postopératoire tardive sont rares, et bon nombre ne s'associent pas à un mécanisme de lésion ou provoquent des symptômes immédiatement après l'événement déclencheur. Un cas d'hématome capsulaire tardif sept ans après une reconstruction mammaire à l'aide d'un implant rempli de solution saline pour corriger une mastectomie est présenté. Contrairement à la majorité des cas publiés, la cause du saignement chez la patiente était à la fois connue et identifiable et les symptômes se sont déclarés immédiatement après l'événement initial. De plus, le mécanisme de la lésion était conforme à une rupture capsulaire hémorragique observée par voie intraopératoire. Le présent cas souligne l'importance d'une évaluation et d'une prise en charge approfondies des patients ayant des antécédents de reconstruction mammaire.

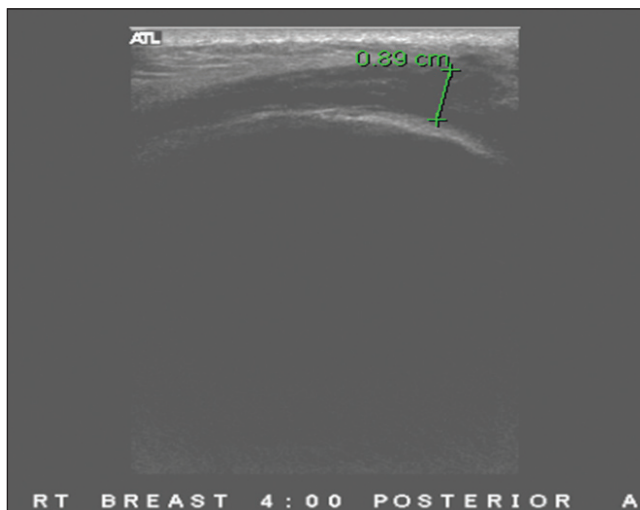


Figure 1) Right breast ultrasound demonstrating a curvilinear fluid collection anterior to the implant and the overlying tissue of unclear consistency

the implant and the overlying tissue, which was of unclear consistency. This was best observed along the inferomedial aspect of the implant near the chest wall, which corresponded to the patient's maximal point of soreness. A magnetic resonance

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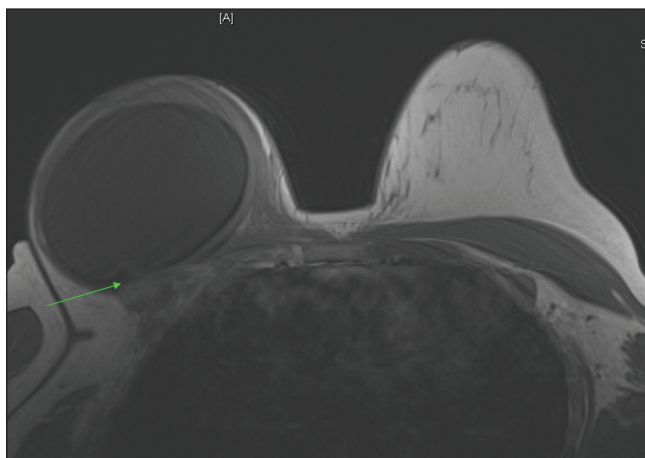


Figure 2) Magnetic resonance imaging demonstrating right breast saline implant with a fluid-filled level between the posterior aspect of the implant and the fibrous capsule (arrow), causing concern for noncollapsed intracapsular rupture and extracapsular rupture with associated hemorrhage

imaging scan confirmed both intracapsular and extracapsular hemorrhage (Figure 2).

The patient was taken to the operating room; on entering the capsule, a pool of dark red blood was visualized and 200 mL of clot was removed. The 600 mL saline implant was removed intact. A tear in the medial aspect of the capsule was visualized extending along the superior capsule (Figures 3 and 4). The cavity was thoroughly irrigated with antibiotic solution before definitive implant exchange from a 600 mL implant to a 500 mL implant as per the patient's request.

DISCUSSION

The incidence of periprosthetic hematoma in the immediate postoperative period has been reported to range from 2% to 10.3% (4,6,8,10,12-15). However, delayed hematomas following breast reconstruction or augmentation are a rare complication. An extensive literature search revealed only 20 reported cases of delayed capsular hematoma, presenting between four months and 22 years after the initial implant placement. Nine cases involved reconstruction following mastectomy for breast cancer (1-6), similar to our patient, while the remainder of cases involved aesthetic breast augmentation (7-16). Several different etiologies have been proposed including trauma, coagulopathy, progressive capsular contracture and microfracture, implant rupture, recurrent cancer and infection (3,6,10). However, many cases do not have a triggering event or a definitive etiology observed intraoperatively (1,6,8,9,11,12,14). Wang et al (2) presented two cases involving polyurethane foam-covered breast implants, which triggered a highly vascular and inflammatory reaction causing erosion of the surrounding vessels. Goyal and Mansel (3) reported a hematoma six years after tissue expander placement secondary to suspected microcapsular fracture, which has also been reported with the use of silicone-gel prostheses (4-6). Systemic anticoagulation has also been implicated in delayed hematomas (5).

On presentation, patient symptoms can include new or worsening breast asymmetry, swelling, pain or tenderness over



Figure 3) Intraoperative image of the breast exterior with associated swelling and ecchymosis of the right breast and sternal region

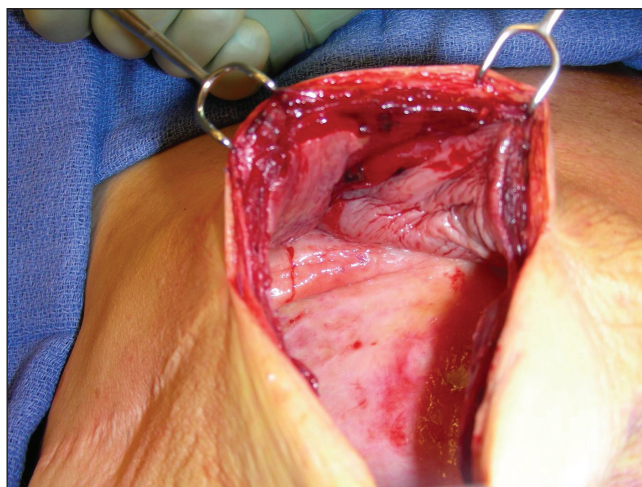


Figure 4) Intraoperative image of the right breast capsular tear discovered following removal of the implant and thorough irrigation. Associated hemorrhage is noted at the site of the tear

the implant or surrounding chest wall, ecchymosis or fluid discharge from an underlying sinus tract (3,12). Unlike our patient, the majority of published cases (2,3,6,8,9,11,13,14) demonstrated the chronic development of hematomas with progressive worsening of symptoms over the course of weeks to months. Patients only rarely presented with sudden onset of symptoms (10,15,16). Daw et al (6) described three cases of chronic expanding hematomas with no identifiable etiology in which symptom development spanned one to two months. These slow-developing hematomas are believed to originate from local inflammatory reactions concurrent with increased surrounding capillary permeability (17). Two reports of delayed hematoma in breast augmentation patients have been attributed to amorous squeezing of augmented breasts during sexual activity, with symptoms developing the following day (10). Our patient presented seven years after breast reconstruction with a capsular hematoma following vigorous stretching exercises. In contrast to the published literature, the etiology of her hematoma was visualized and confirmed intraoperatively as a capsular tear. In addition, she acutely

developed symptoms after the initiating events, which has only rarely been reported.

Thorough clinical evaluation is augmented by imaging studies evaluating suspected delayed hematomas. As in our case, ultrasound is an appropriate and cost-effective tool for evaluating the periprosthetic capsule for extent of fluid collection, and differentiating between fluid collection and hematoma (8,10,13,15). Ultrasound is limited by patient tenderness and body habitus, and is less effective for evaluating implant rupture or minor capsular tears and bleeds (3). As with our patient, the increased sensitivity of magnetic resonance imaging could be used to help better characterize surrounding tissue, albeit at a higher cost (8,12,18). Definitive treatment involves surgical drainage of the hematoma with evaluation of the implant. Complete hematoma evacuation is important for both relief of patient discomfort and preventing a nidus for infection or worsening capsular formation (6,10,13,15).

SUMMARY

We presented a case of late capsular hematoma seven years after breast reconstruction with a saline implant following mastectomy. In contrast to the majority of published cases, our patient presented with both a known and traceable cause of her bleed, and with symptoms that developed immediately after the initial event. Furthermore, the mechanism of her injury was consistent with the bleeding capsular tear observed intraoperatively. Our case emphasizes the need for clinicians to maintain a high index of suspicion when evaluating new symptoms in patients with a previous history of breast reconstruction, even many years after surgery. Comprehensive clinical evaluation should be supplemented by appropriate imaging to confirm the diagnosis before definitive surgical treatment involving hematoma evacuation.

CONFLICT OF INTEREST: The authors have no conflicts of interest to declare.

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