

An Overview of Post Mastectomy Seroma and Treatment Options: Review Article

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ABSTRACT

Background: Among women, breast cancer is the most common kind of diagnosis, the main cause of cancer-related death, and the leading source of lost life years due to disability-adjusted for global mortality. Breast-conserving surgery or mastectomy is common in the treatment of the disease which was relied on for many years. Seroma is a common side effect after mastectomy. Some surgeons view it as a necessary evil that must be endured after surgery. Seroma formation following breast surgery can occur anywhere from 3% to 85% of the time.

Objective: This review aims to give an overview of seroma formation after mastectomy surgeries and the possible treatment options.

Methods: The databases were searched for articles published on 3 databases [PubMed -Google scholar-science direct] and Boolean operators (and, or, not) had been used such as [Post Mastectomy Seroma, Breast cancer surgery and Treatment for breast cancer] and in peer-reviewed articles between January 2009 and June 2021.

Conclusion: Although post-mastectomy seroma occurs in the vast majority of individuals, tightening the flap after surgery may help avoid its development.

Keywords: Post Mastectomy Seroma, Breast cancer surgery, Treatment for breast cancer.

INTRODUCTION

Among women, breast cancer is the most common cause of cancer-related death and the leading source of lost life years due to the disability-adjusted for global mortality⁽¹⁾.

Breast-conserving surgery or mastectomy is common in the treatment of the disease for many years⁽²⁾.

Seroma is a common side effect after mastectomy and is no longer viewed as a problem but as a side effect of surgery. Some surgeons view it as a necessary evil that must be endured after surgery. Seroma formation following breast surgery can occur anywhere from 3% to 85% of the time⁽³⁾.

This condition isn't fatal, but it causes flap necrosis and wound dehiscence, which can lead to sepsis as well as a long recovery period and several physician visits. It could also postpone adjuvant treatment⁽⁴⁾.

It is caused by cellular damage caused by heat action and obliteration of partial arteries and lymph ducts during dissection, both of which are currently being debated⁽⁵⁾.

Surgeons have been researching the most effective methods of reducing the occurrence of seromas. Using electrocautery to stop blood loss during surgery may increase the incidence of seroma since it damages tissues with heat⁽⁶⁾.

The review article aims to give an overview of seroma formation after mastectomy operations and possible treatment options.

Methods:

A search strategy was performed to determine the related literature and the objective of this review was to identify and give an overview of seroma formation after mastectomy operations and possible treatment options. Relevant keywords included: Post Mastectomy Seroma,

Breast cancer surgery, Treatment for breast cancer, and more synonymous keywords were used.

These databases were searched for articles published on 3 databases [PubMed - Google scholar-Science direct] and Boolean operators (AND, OR, NOT) had been used such as [Post Mastectomy Seroma AND Breast cancer surgery OR Treatment for breast cancer] and in peer-reviewed articles between January 2009 and June 2021. A 12-years date range was selected, and no language limitations, and filtered on the selected data basis. However, the range of time intervals for research is wide as data are scarce particularly on reviewed, accurate, and depth in the retrieved literature. Documents in a language apart from English were excluded as sources for interpretation were not found. Papers apart from main scientific studies were also excluded and documents unavailable as a total written text, conversation, conference abstract papers, and dissertations.

Post-mastectomy seroma:

Definition and incidence of post-mastectomy seroma:

It's a common complication of mastectomy, and it occurs when serous fluid builds up in the axillary dead space following skin flap creation. Three to 85 percent of breast or axillary surgeries, patients experienced a buildup of serous fluid⁽⁷⁾.

When several aspirations were required or a new drain was inserted due to chronic instances, seroma was observed. The word "seroma" has also been used in other research were more than 5 to 20 cc of fluid has been aspirated and validated as a result⁽⁸⁾.

Detection methods, as well as the definition of seroma, influenced the prevalence of the disease. Most seromas were found to be mild and self-limiting if fluid

collection necessitated outpatient aspiration, whereas those necessitating surgical draining were found to be more severe and more serious⁽⁹⁾.

However, although seromas are generally considered to be minor problems, they are among the most difficult complications for surgeons to deal with as well as a major source of stress and annoyance for the patient. There is also evidence to support the theory that seroma and the methods used to prevent it can lead to secondary consequences after breast surgery such as necrosis of the flap or lymphedema, delayed healing, reduced shoulder function, and infection. Because of this, post-operative breast seroma remains a significant source of morbidity for surgeons and one for which the optimum management has long been contested⁽¹⁰⁾.

Pathogenesis:

Seroma's pathophysiology is still a mystery. Surgery-induced acute inflammatory exudates cause seroma, which develops as a secondary complication of the acute healing period that follows injury⁽⁶⁾.

Swelling in the chest and axilla raises flaps, making it more difficult for them to adhere to the tissue substrate. Consequently, it can cause severe morbidity such as the development of wound hematomas, delays in wound healing, infections in the wound bed, wound dehiscence, and a need for adjuvant therapy⁽⁶⁾.

No single strategy has been proven to be consistently and reliably successful in preventing or reducing seroma production in practice⁽¹¹⁾.

Treatment of established seromas:

A) Acute seromas:

Seroma incidence rates remain high despite efforts to avoid their occurrence. The practice of "beneficial neglect" is employed by some surgeons. The pain of seromas is a common complaint from patients, and seromas of clinical significance are aspirated. Collections higher than 75–100 ml can cause pain, wound dehiscence, implant exposure, and infection; draining them is often recommended⁽¹²⁾.

Postoperative edema is common and may be small and resolve on its own, but it is important to know that it is prevalent. It's important to note that seromas are distinct from edema because they fluctuate and are only of concern when they become painful or irritate the site. When seroma volumes are large, tense, or causing discomfort, aspiration is the best method of removal. Patients with these symptoms are instructed to visit seroma clinics, where they are evaluated by breast care nurses and aspirated if the seroma is causing substantial symptoms or is likely to produce wound complications problems. Infection might be spread through repeated aspirations of the seroma. Once infected, a seroma must be aspirated frequently until the infection is eradicated. When implants are utilized in reconstructive surgery, this can lead to implant failure and the requirement for an explanation⁽¹²⁾.

B) Chronic seromas:

In some cases, despite aspiration, seromas can persist and grow in size. Seromadesis is a term used to describe a procedure in which agents are injected into the seroma cavity to promote the adhesion of flaps to the chest wall. Saeb-Parsy *et al.* described an effective method of using talc seromadesis to treat a chronic seroma, which had failed to resolve for 8 months, in a case report⁽¹³⁾.

Talc type, manner of application (e.g., poudrage), and if a corrugated drain and/or pressure dressing should be utilized are just some of the questions that need to be answered to maximize this procedure. After removal, a corrugated drain can lead to a tiny sinus due to its ability to stimulate flap apposition to the chest wall. It appears to be a safe and efficient alternative for the non-surgical treatment of problematic, chronic seromas⁽¹²⁾.

Chronic seromas have been treated using tetracycline sclerotherapy. Tetracycline infusion was reported to be successful in 73% of patients after one injection and 100% of patients after three or more injections in a study of 49 patients by Hokkam and colleagues⁽¹⁴⁾.

Hypertonic saline and iodine are two other methods for achieving seromadesis⁽¹⁵⁾. Non-invasive seroma care has been demonstrated in a pilot trial using lymph taping techniques. Chronic seromas that have not responded to conventional treatments may require surgical intervention, such as scoring or excision of the capsule⁽¹⁶⁾.

The flap fixation technique's basic premise is to remove any potential dead space by binding the flap to the underlying pectoral muscle with tissue glue or sutures. The production of seroma and aspiration of seroma following mastectomy appear to be diminished by the mechanical fixing of skin flaps⁽¹⁷⁾.

CONCLUSION

Although post-mastectomy seroma occurs in the vast majority of individuals, tightening the flap after surgery may help avoid its development.

Conflict of interest: The authors declare no conflict of interest.

Sources of funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author contribution: Authors contributed equally to the study.

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