

## C A S E R E P O R T

# Management of abdominal wall recurrent subfascial seroma after pelvic surgery

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**Summary.** Seroma is a serous fluid collection that accumulates in dead spaces, where tissue was attached to something before surgery. Abdominal seroma formation is a quite common complication after breast reconstruction with abdominal's flaps or after an abdominoplasty procedure. The most frequently used method for decreasing early seroma frequency are the use of closed suction drains, ultrasonic dissection and sharp dissection, use of fibrine, and use of clip or ligation of vessels during the surgery. The management strategies consist of non-operative management, percutaneous drainage, or surgical drainage. With this paper we report a case of a subfascial seroma of the abdominal wall occurred in a 41 years old patient after laparotomy surgery for a voluminous pelvic serocele. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Keywords:** seroma, fluid collection, abdominal wall

## Introduction

A seroma is a collection of serous fluid in an uncommon space of the body where tissue was attached to something. They often occur as a complication of surgery, especially after breast surgery [1], reconstructive surgery [2 - 4] and abdominoplasty [5].

The etiology is still unknown but a number of mechanisms have been investigated to explain seromas' formation. Dissection of skin flaps from the underlying muscle, inflammatory mediators, use of diathermy and surgically created dead space have all been implicated [2 - 4]. Tissue disruption and use of electrocautery are also important factors, as are disruption of vascular and lymphatic channels, exudation of proteins and difficult wound healing [6 - 8].

## Case

We present the case of a 41 years female patient with history of Arnold Chiari type I syndrome. Her

previous surgeries included two caesarean sections (respectively 14 and 12 years ago) and an emergency peripartum hysterectomy during a third caesarian section 8 years ago. No others comorbidities were reported. The BMI of the patient before surgery was 24.

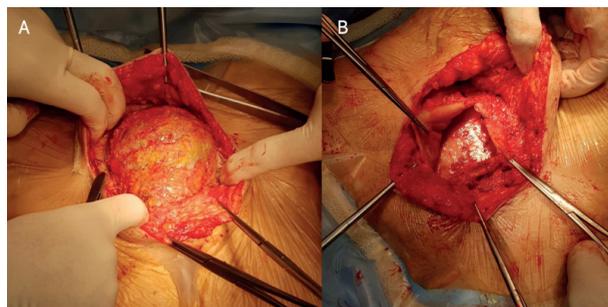
The patient underwent a monolateral abnexcetomy for a voluminous pelvic serocele performed with Küstner incision and placement of an endopelvic drainage tube and a subcutaneous drainage tub. The endopelvic drainage tube was removed on the first postoperative day (150 cc over the last 24 hour); the subcutaneous drainage tube was removed on the 3th postoperative day (200 cc over the last 24 hour). Postoperative seroma development followed the surgery after twenty days. It developed under the previous laparotomy scar with appearance of a subcutaneous roundish lump of 7 cm in size. Patient's preoperative and postoperative chemical and haematological findings were normal. A CT scan revealed the presence of a capsuled mass between the skin and the rectus abdominis muscles, with a clear cleavage layer (**Fig. 1**).



**Figure 1.** The appearance of the seroma at the pre operative CT scan

After 40 days from the previous surgery we performed a laparotomy incision on the previous postoperative scar and we drained the seroma through a longitudinal incision of its capsule (**Fig. 2**). The site was washed with a solution of Rifamycin 90mg/18ml and physiological solution. The capsule was finally closed with a double-breasted suture. A sub-fascial drainage tube was placed during the surgery and it was removed on the seventh postoperative day (25 cc over the last 24 hour). The BMI of the patient before this second surgery was 21.

After 7 days from the drainage tube removal, the seroma recurred. We performed a drainage of the seroma by aspiration, followed by an oral treatment of Cefixime 400mg for five days. We finally observed definitive resolution (**Fig. 3**). Follow up of 6 months was unremarkable



**Figure 2.** Intraoperative finding A) Encapsulated seroma B) Pseudocapsule of the seroma after drainage



**Figure 3.** Final appearance of the abdominal region after a 6 months follow-up

## Discussion

Postoperative seroma formation represents a frequent complication following breast surgery, reconstructive surgery and abdomino-plasty [1 - 5]. However, very few cases are reported after cesarean section, and how they should be treated. The disruption of lymphatic channels and blood vessels in these procedures constitutes a central role in the accumulation of exudative fluid that results in seromas. The accumulation of lymph, inflammatory and exudative fluids in dead space prevents the apposition and adhesion of tissue surfaces [9]. Over time, if not detected or adequately treated, a fibrous pseudo capsule can develop and transforms the seroma into a chronic condition, that is a potential specific site of infection [8]. The seroma pseudo capsule, that lacks an epithelium on its inner surface, is composed of fibrous tissue with eosinophilic hyaline degeneration of collagen and a mild inflammatory infiltration [10]. Numerous studies have been performed to evaluate the effectiveness of various strategies to reduce the incidence of postoperative seromas. Janis et al. [6] performed a comprehensive systematic review of randomized controlled trials and comparative prospective studies that evaluated strategies to reduce the incidence of postoperative seromas. It revealed that the most used and useful method for decreasing early seroma frequency is the use of closed-suction drains with volume-controlled drain (below 20 to 50 cc over a 24-hour period). Ultrasonic dissection

or sharp dissection resulted in lower rates of seroma than cautery. Clip/suture ligation of vessels resulted in a lower rate of seroma compared to cautery. It was also found a significant decrease in seroma formation with the preventive use of fibrin during the initial surgical procedure. Consideration should be given to immobilizing the surgical site for a few days postoperatively. Sclerosants (such as talc and Doxycycline) have no role in seroma prevention but have a potential usefulness in the treatment of chronic seromas [7]. Another suggested way of treatment is the use of a Negative Pressure Wound Therapy System KCI-V.A.C.Ult<sup>TM</sup> that can help induce collapse of the seroma cavity by removing the serous fluids as well as facilitating adherence of the cavity surface and making it sticky by using the sclerosant [7]. Although seromas usually resolve with multiple aspirations and the use of sclerosants, some can often become chronic and lead to the development of a pseudo capsule. This condition frequently requires reoperation with complete resection of the entire compromised tissue [11, 12]. In our case, there was the formation of a pseudo capsule around the seroma with consequent extreme thinning of the underlying rectus abdominis muscles. Therefore, in order to avoid the development of a laparocoele, we decided not to remove the capsule. We opted instead for the drainage of the seroma, with complete resolution after the second attempt.

## Conclusion

We retain very important our approach due to the lack in literature of a standardized management of this postoperative complication, furthermore in recurrences. Despite the fact that seroma formation is more frequent after reconstructive and plastic surgery, it can occur even after laparotomy pelvic surgery, especially with Küstner incision. In our case, seroma was resolved with an use of multiple aspirations followed to surgical technique double-breasted suture.. Finally, we suggest that patients' weight loss could be an important risk factor of seromas, linked to the weigh-loss skin that should be better investigated.

The authors declare that they have not conflicts of interest

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