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**Reducing abdominal seroma after DIEP flap breast reconstruction, outcomes in 726 patients.**

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Sir:

We have read the article by Tourani SS et al. with great interest [1]. Following a cadaveric study the authors' findings indicated that sparing of Scarpa's fascia does not preserve the majority of lymphatics in the lower abdomen. Preserving a thin layer of fat above the rectus sheath reduces rates of seroma formation by preserving the deep lymphatics that run on top of the aponeurosis.[2]

Quoted rates of abdominal seroma formation following DIEP flap breast reconstruction range from 5.6 to 8% [3]. Various methods have been described aiming to reduce seroma rates including quilting sutures [4], the use of abdominal binders and postoperative drains. Even with newer techniques a rate of 2.4 % (42 patients) was reported [5].

In our practice we note a very low rate of seroma formation after DIEP flap breast reconstruction. We analysed data from January 2000 to december 2014 which were prospectively collected for all consecutive patients

undergoing DIEP flap breast reconstruction in Norfolk and Norwich University Hospital. 4 out of the 726 patients had seromas, a rate of 0.55 %.

Donor site closure was performed in a standardized fashion in all the cases. The superior abdominal flap is undermined in the central portion only (Figure. 1). We avoid lateral dissection unless a rectus divarication is corrected. A thin layer of fat overlying the rectus sheath and the external oblique muscle is left intact, except for where the DIEP perforators have been dissected. We use cutting diathermy paying close attention to the cutting technique, using the arc rather than contact, thus minimizing thermal injury to the fat and deep lymphatics. The rectus sheath is closed with a double continuous suture with looped 0 Nylon. The abdomen is closed in three layers using a 2/0 PDS interrupted sutures to Scarpa's fascia, followed by deep dermal and subcuticular sutures using 3/0 Monocryl. We use two 15 F Blake's ® drains which are removed once the drainage is less than 30 ml in 24 hours. This ranged from 3 to 8 days and the average is 5.3 days. We also adhere to a strict postoperative physiotherapy regime avoiding active movements of the abdomen for the first 10 days to minimize shearing forces over the abdominal wall.

According to the Authors' findings, lymphatics are located close to fascial planes rather than in the adipose tissue itself. These findings support our current practice where we preserve the tissues overlying the rectus sheath aiming to preserve the deep lymphatics. We also believe that the reduction of the dead space plays an important role in decreasing seroma formation. We achieve that by avoiding any type of lateral undermining; using suction drains without the need for quilting sutures or abdominal binders. We were able to position the scar at the level of the pubic hair line. In conclusion we believe that both the preservation of the deep lymphatics and the reduction of the dead space play a key role in the reduction of the seroma incidence as suggested by our data.

## References

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## **Legend**

Figure 1. The superior abdominal flap is undermined only in the central portion, leaving it intact laterally thus reducing the potential dead space. A thin layer of fat overlying the rectus sheath under the superior abdominal flap is left intact.

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Figure 1.



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