

Key publications in a variety of procedures

Well-documented high rates of complications

Paper	Procedure	Design	Data	Comment
Archana 2018	Mastectomy	Randomized controlled trial, n=360 patients comparing scalpel and electrocautery	Incidence of seroma 34.2% and 21.7% (Group 1 vs 2) Incidence of necrosis 10% and 4.2% (Group 1 vs 2)	The increased incidence of seroma formation and flap necrosis [with electrocautery] is still a concern for many surgeons
Massey 2018	Incisional ventral hernia repair (VHR)	Systematic review of techniques to reduce the incidence of post-op seroma formation in open VHR; 9 studies, 805 patients	Various results, some conflicting data for intervention methods studied, with rates ranging from 3% to 76% in the various cohorts	There is currently insufficient quality evidence to recommend any of the investigated methods, some of which incur significant additional cost
Papageorge 2017	Laparoscopic ventral hernia repair	Retrospective cohort study of 1280 patients	Overall seroma rate was 10.4%	Primary fascial closure had no significant effect on the risk of seroma formation
Kosins 2013	Various, including: abdominal wound, breast, hip & knee, obesity, lymph nodes	Evidenced-based review of prophylactic drainage of subcutaneous wounds in surgery. 52 RCTs were included. 15 were seroma studies including 2885 operations.	In the drain group, 268 (18%) of these surgical procedures resulted in seroma, whereas in the no-drain group, 306 (21%) reported this outcome.	Wound complications are associated with increases in morbidity, mortality, and costs for healthcare systems
Michelotti 2013	Breast reconstruction	Retrospective review of 284 tissue expander breast reconstructions	7.7% seroma rate in 220 breast reconstructions in which ADM was used	Seromas form more frequently when ADMs are used as compared to reconstructions in which they are not
Maricevich 2009	Cranial reconstruction	Prospective study of n=63 patients, comparing new surgical technique to reduce seromas	Overall rate of seroma was 65.1% (90.9% in control group and 51.2% in treatment group)	Seroma is one of the most frequent complications of this procedure and can lead to the dehiscence, extrusion, infection
Ngan 2009	Breast reduction surgery	Retrospective study of 182 patients/133 breasts	6.1% of patients had a minor wound problem, 2.2% developed a hematoma	Hematoma and seroma formation is not an uncommon complication following breast reduction surgery
Boostrom 2009	Breast and axillary surgery	Retrospective study of 324 patients/561 breast or axillary procedures	47 seromas (8.4%); Surgical site infection occurred in 8.5% of the seroma patients, double the incidence rate in non-seroma patients	After mastectomy, extensive dissections result in large dead space, so flaps may not adhere well and fluid accumulates
Shermack 2008	Body contouring for massive weight loss	Retrospective study to assess risk factors n=222	Seroma rates by body regions: 4% thigh; 12% abdomen; 18% abdomen+back	Seroma fluid collections can become vexing to the patient and the surgeon, causing infections and disability
Janis 2008	Various, including: Head & Neck, Breast, Back, Abdomen	Systemic review of prevention of post-op seroma; 75 studies including 7173 patients	Various techniques/methods resulted in reported rates for cohorts ranging from 15.4% to 44.3%.	Our systematic review demonstrated that the incidence of postoperative seroma can be reduced by taking measures that obliterate dead space and reduce shear forces