

Aim:

Besides the high incidence of breast cancer, more women are diagnosed with BRCA gene mutations. This has further increased the number of patients, in our practice who undergo therapeutic or prophylactic mastectomy combined with an immediate autologous breast reconstruction.

Although the Deep Inferior Epigastric Artery Perforator (DIEAP) flap has evolved as the 'workhorse' flap for autologous breast reconstruction, establishing it as a gold standard has been slow to come. Some earlier smaller and retrospective studies have variably reported on operative times and high complication rates, specifically high revision rates, fat necrosis and flap loss rates. This prospective study aims at weighing up the pros and cons of this procedure to clearly define its safety and position in today's reconstructive armamentarium.

Methods and Materials:

A prospective analysis was completed of 1036 DIEAP flap breast reconstruction patients performed at the departments of the author's both centers over a 7 year period (2003-2010). The mean follow-up period was 37 months (range 10 months – 8 yrs.). The rate of minor and major complications was registered for venous congestion, flap loss, fat necrosis, haematoma, seroma, delayed wound healing, hernia and bulging.

The influence of possible interfering risk factors such as age, smoking, diabetes, obesity, previous radiotherapy and chemotherapy was assessed.

Results:

Analysis showed that patients benefit of the DIEAP flap breast reconstruction with the following complication rates: venous congestion (1.45%), partial flap loss (1.06%), marginal necrosis (2.32%), total flap loss (0.68%), fat necrosis (1.35%), haematoma breast (2.90%), delayed wound healing breast and abdomen (both 1.35%), seroma (1.45%), hernia (0.39%) and bulging (2.12%).

The influence of smoking on flap survival (2.7% vs 0.6%), but also on haematoma formation (6.7% vs 2.8%) and on dehiscence of skin flaps (5.3% vs 1.1%) is statistically significant.

Conclusion:

This study represents the largest prospective analysis of DIEAP flap breast reconstructions. The overall complication rate was low with a flap loss risk of less than 1%. Both centers had similar outcomes indicating that this procedure has become standardized.

This evidence based study therefore clearly outlines the safety of the DIEAP flap procedure. This is further underlined by the size of the study and the length of follow-up and therefore justifies the DIEAP flap as the gold standard in breast reconstruction today.