



Direct To Implant Pre-Pectoral Breast Reconstruction

Author(s):

Alex Viezel-Mathieu, MD¹
Nayif Alnaif, MD²
Albaraa Algerian, MD³
Jean-Francois Boileau, MD⁴
Tassos Dionisopoulos, MD⁵

Background:

Recently, there has been a resurgence in popularity of pre-pectoral reconstruction, with the advent of new technologies and materials such as acellular dermal matrix (ADM), form stable silicone gel implants and intra-operative tissue perfusion analysis. Our centre has been utilizing a direct to implant pre-pectoral reconstruction technique for over two years. This paper aims to revisit the notion of immediate direct to implant pre-pectoral breast reconstruction and provide our Montreal Jewish General Hospital (JGH) single surgeon experience. A cost analysis is also presented and compared to traditional sub-pectoral two stage reconstruction.

Methods:

Following institutional review board ethical approval, clinic log books were used to identify all patients who underwent pre-pectoral direct to implant breast reconstruction with ADM over an 18-month period. A full electronic medical record review was performed. Extracted data consisted of patient demographics, procedural details, immediate post-operative results, drain duration, number of follow up visits and early and late complications. All countable variables were included in the cost analysis which was performed in Canadian dollars based on the most up to date values.

Results:

A total of 77 patients representing 116 reconstructed breasts were included in the current study. The pre-pectoral group was composed of 39 patients and 60 breasts and the sub-pectoral comparison group of 38 patients and 56 breasts. Patient demographics including age, diabetic and smoking status and neo-adjuvant chemo were similar for both pre-pectoral and sub-pectoral groups. When compared to patients having undergone traditional two stage sub-pectoral reconstruction, patients having undergone direct to implant pre-pectoral reconstruction benefited from fewer complications (24.7% vs. 35.6% respectively) and fewer follow up visits (3.8 vs. 5.4 respectively) as well as no animation deformity. Additionally, direct to implant pre-pectoral reconstruction proved to be 25% less expensive than two-stage sub

pectoral reconstruction when all associated costs were considered (\$17 122 vs. \$22 716 CAD respectively).

Conclusions:

With the improvement of materials and introduction of new technologies, the reconstructive surgeon's arsenal has changed dramatically. Using proper patient selection, form stable implants and ADM's, reconstruction breast surgeons are now able to provide safe and consistent results using the pre-pectoral technique. Pre-pec implant placement can avoid many of the disadvantages of traditional two stage sub-pectoral reconstruction including post-operative pain, pectoralis muscle dissection, animation deformity and multiple surgeries. Additionally, pre-pectoral reconstruction appears to be cost effective with a similar complication profile. To the best of our knowledge, the cost analysis presented in the current study is the first of its kind comparing pre-and sub pectoral reconstruction techniques in our single payer system.

McGill University Health Centre ^{1 2 3} Jewish General Hospital ^{4 5}