

Maxwell G, Gabriel A. REVOLVE™ autologous fat processing system reduces operative time. California Society of Plastic Surgeons 64th Annual Meeting, Newport Beach, CA, May 2014.

Revolve™ Autologous Fat Processing System Reduces Operative Time

Introduction: Autologous fat grafting involves processing of harvested fat prior to injection. Currently, centrifugation is the standard method of fat processing; however, it is cumbersome to perform and is time consuming, especially when large volumes of fat are processed. The recently introduced Revolve autologous fat processing system that incorporates fat harvesting and processing in a single unit has offered a simple, more efficient system. The purpose of this study is to demonstrate that utilizing the Revolve system shortens the operative procedure which could potentially translate into OR cost savings.

Methods: Consecutive patients undergoing autologous fat grafting as part of breast surgery over a 2-year period were included in this analysis. From January to December 2012, fat processing was performed utilizing the centrifugation method while from January to November 2013, the Revolve system was utilized. The volume of fat harvested, volume of fat injected after processing, time taken to complete fat grafting (from harvest to injection), and complications within 60 days of grafting were recorded and compared between the 2 processing methods.

Results: Fat grafting was performed in a total of 118 patients in the centrifugation and 103 patients in the Revolve group. Volume of fat harvested and injected were significantly higher in the Revolve group and the time to complete fat grafting was significantly shorter (Table). There were no complications in either group. Assuming an operating room (OR) cost of \$15-\$20 per OR minute for a basic surgical procedure (excluding physician costs), the mean OR cost with the Revolve system would be \$450-\$600 vs \$1273.50-\$1698 with the centrifugation method. After taking into consideration the cost of the Revolve system (\$470), net savings in OR cost with the Revolve system would be in the range of \$353.50-\$628 per case.

Conclusions: Revolve fat processing system decreases operative time and possibly OR costs. It also allows for a larger volume of fat to be processed and, hence, injected; which could potentially lead to better cosmetic outcomes.

	Revolve System Mean ± SD (Range)	Centrifuge Method Mean ± SD	P-value
Volume of fat harvested, <i>mL</i>	507.8 ± 106.4 (200-700)	137.4 ± 45.6 (70-350)	< 0.0001
Volume of fat injected, <i>mL</i>	179.0 ± 44.1 (80-260)	82.4 ± 32.0 (40-200)	< 0.0001
Operative time*, <i>min</i>	30.0 ± 5.9 (20-45)	84.9 ± 13.1 (60-124)	< 0.0001

*From harvest to completion of grafting; P-value was calculated using unpaired t-test.