



Macromastia and Reduction Mammoplasty: Analysis of Total Cost of Care and Opioid Consumption at 10-Years Post-Operatively

Kayvon Jabbari^a, MPH; Michael B. Gehring^b, MD; Matt Iorio^b, MD; David Mathes^b, MD; Christodoulos Kaoutzanis^b, MD

Affiliations: ^aFrom the University of Colorado School of Medicine, ^bFrom the Department of Plastic and Reconstructive Surgery, University of Colorado School of Medicine, Aurora, Colorado

Background

- Reduction mammoplasty is commonly performed with over 100,000 procedures annually.
- Despite a persistent number of patients with macromastia desiring reduction mammoplasty, insurance companies are less willing to pay for the operation.
- Macromastia has been associated with increased opioid consumption.
- The purpose of this study was to evaluate total cost-of-care and opioid consumption in patients with macromastia and compare those who underwent reduction mammoplasty versus those that did not have surgery.

Methods

- PearlDiver, a national database encompassing private payers with fifty-three million unique patients, was queried from 2010-2020.
- Patients with macromastia and those who underwent reduction mammoplasty were included utilizing International Classification Codes 9 and 10 and Current Procedural Terminology codes.
- Total cost-of-care and morphine milligram equivalents were calculated up to 10-years post-operatively for both cohorts.
- Cohorts were matched based on age, obesity and Charlson Comorbidity Index, and comparative statistics were calculated using t-tests.



Results

- Of the 333,854 patients diagnosed with macromastia, 48,348 underwent reduction mammoplasty.

Total Cost-of-Care

- At 1 through 5 years post-operatively, total cost-of-care among patients who underwent reduction mammoplasty was higher compared to those that did not (Table 1).
- At 6 through 10 years post-operatively, there was no significant difference in total cost-of-care between the two cohorts (Table 1).

Table 1. Total Cost of Care per Year (USD), Reduction Mammoplasty versus None

Total Costs	No surgery	Reduction mammoplasty	Difference	P-Value
1 year	7,308.79	8,801.21	1,492.42	< 0.01
5 years	26,244.09	27,462.15	1,218.06	0.030
6 years	30,121.41	31,851.02	1,729.61	0.135
7 years	34,399.86	36,430.68	2,030.82	0.084
8 years	39,128.36	41,468.72	2,340.36	0.139
10 years	52,195.74	55,851.08	3,655.34	0.317

Table 2. Morphine Milligram Equivalents per Day in Macromastia Patients, Reduction Mammoplasty versus None

	No surgery	Reduction mammoplasty	P-value
30 days	52.58	52.46	0.079
90 days	53.97	51.27	< 0.01
1 year	54.78	48.63	< 0.01
5 years	55.31	46.66	< 0.01
10 years	54.63	45.65	< 0.01

Results Continued

Morphine Milligram Equivalents

- At every successive follow-up beyond 30 days post-operatively, macromastia patients not receiving reduction mammoplasty had a statistically significant higher morphine milligram equivalents consumption (Table 2).

Discussion and Conclusions

- Patients with macromastia who undergo reduction mammoplasty have less opioid consumption compared to patients that do not undergo reduction mammoplasty, with no long-term increases in total cost-of-care.
- This provides further evidence for insurance companies and hospital stakeholders to support each patient with macromastia pursuing surgery, and emphasizes that reduction mammoplasty is not simply a cosmetic procedure, but rather, a medically necessary operation for treatment of a debilitating condition.
- Given long-term reduced consumption of opioids in patients that underwent reduction mammoplasty, there is further indication to provide financial coverage for reduction mammoplasty to help combat the opioid epidemic affecting the United States.
- Since there are no reports in the published literature indicating any conservative therapy that leads to permanent relief of macromastia symptoms, the costs of such treatments could be mitigated if a casual treatment like reduction mammoplasty were to be utilized.