

Symptomatic Macromastia and Days Lost from Work

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Objective: To compare the amount of days lost from work by women with symptomatic macromastia while on conservative management and after they undergo breast reduction surgery.

Methods: Working women with symptomatic macromastia were requested to record the number of days lost from work as a result of back or neck pain associated with their large breasts during a 6 months period of conservative management required by their health insurance. The conservative management included physical therapy, weight loss and analgesics. A reduction mammoplasty was approved and performed in all the women following the period of conservative management. After the women returned to work, they were again requested to record the number of lost work days associated with back/neck pain during the next 6 months. Basic demographic information was also obtained.

Results: One hundred twenty-three women with symptomatic macromastia participated. The mean age was 31 ± 10 , the mean body mass index was 29 ± 4 , mean bra size was 38-D, 45% had a college degree or higher, and 90% had full-time employment. The mean number of lost work days was 6 ± 3 with conservative and 1 ± 1 with surgical management in a 6 months period, a difference that was statistically significant ($p < 0.05$). Based on gender-specific median wage rates from the Bureau of Labor Statistics, these lost days represent an economic loss of \$1,642 annually per woman in conservative management.

Conclusion: Surgical treatment of breast hypertrophy resulted in significantly less days lost from work. There is a higher cost in loss productivity with conservative management. [*P R Health Sci J* 2022;41(3):157-160]

Key words: Breast, Macromastia, Back pain

Women with symptomatic macromastia (breast hypertrophy) often complain of back and neck pain, headaches, shoulder grooving and upper extremity numbness resulting from brachial plexus compression secondary to the weight of the breasts being transferred to the shoulder strap area (1-6). Such symptoms are responsible for a significant number of lost work days per year adding an economic burden to women with macromastia. Back and neck pain have been associated with loss productivity and absenteeism in the workplace (7). All these symptoms have been shown to improve with reduction mammoplasty (8-11). However, health insurance companies continue to request nonsurgical interventions and conservative management in spite of the fact that there is no good scientific evidence of their effectiveness (1). Conservative management may result in a higher cost in loss productivity at the workplace. The present study proposed to evaluate the impact of unresolved symptomatic macromastia on absences from work, resulting from back and neck pain.

Methods

A prospective cohort study was performed between January 2018 and April 2020 to evaluate the number of lost work days

by women with symptomatic macromastia. Women attending the Plastic Surgery Outpatient Clinic of the Administration of Medical Services of Puerto Rico (ASEM) and the principal investigator's private practice were invited to participate in the study. For patient selection, the following criteria were considered: female gender, age between 21 and 65 years, diagnosis of macromastia, symptoms related to the size of the breasts, and having a full or part-time job. Exclusion criteria included: male gender, non-working women, and being younger than 21 or older than 65 (because back pain in those age intervals may be associated with other conditions). Working women with symptomatic macromastia, who agreed to participate, were requested to record the number of days lost from work as a result of back or neck pain associated with their large breasts during a 6 months period of conservative management required by their

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managed care medical policy. The conservative management included physical therapy, weight loss and analgesics. A reduction mammoplasty was approved and performed in all the women following the period of conservative management. After the women returned to work, they were again requested to record the number of lost work days associated with back or neck pain during a period of 6 months. Comparison between the number of lost work days during the period of conservative management versus following surgical management was performed. Basic demographic information also obtained included: age, body mass index, bra size, level of education and employment. The information collected did not contain personal identifiers. The gender-specific median wage rates from the Bureau of Labor Statistics were used to estimate the economic value of lost work days annually (12). The difference between groups, regarding the number of lost work days, was evaluated using the Student's t-test with a p-value of less than 0.05 being considered significant. This study was approved by the Institutional Review Board of the University of Puerto Rico.

Results

The study evaluated 123 women with symptomatic macromastia. The mean age was 31±10 years. Table 1 shows the characteristics of the group upon entering the study, regarding body mass index (BMI), mean bra size, level of education and type of employment (full vs. part time). After the initial 6 months of conservative management during which they attempted to lose weight with diet and exercise, the mean BMI was only lowered to 28±5. Table 2 compares the mean number of lost work days between the conservative and surgical management in a 6 months period. Our study found a statistically significant difference (p<0.05) between the two groups. The women while on conservative management had a mean of 5 additional days absent from work because of back/neck pain when compared to the same group of women after surgical management. To give a dollar value to the loss productivity at the workplace, we used the Labor Force Statistics from the Current Population Survey of 2019 to obtain the value of the median weekly earning (\$821) for women (12).

Table 1. Characteristics of the patients upon entering the study.

Mean body mass index	29±4 kg/m ²
Mean bra size	38-D
Mean weight of resected breast tissue per breast	896±395 grams
Education Level:	
• Less than high school	0 (0%)
• High school graduate	15 (12%)
• Vocational school/some years of college	53 (43%)
• College degree or higher	55 (45%)
Type of employment:	
• Part-time employment	12 (10%)
• Full time employment	111 (90%)

Based on gender-specific median wage rates from the Bureau of Labor Statistics, the additional 10 days/year lost from work represents an economic loss of \$1,642 annually per woman in conservative management.

Table 2. Days lost from work because of back or neck pain during the period of 6 months. Student's t test used for p-value.

	Conservative management (n=123)	Surgical management (n=123)	p*
Loss work days	6±3	1±1	<0.05

Discussion

Symptomatic macromastia is defined as a syndrome of persistent neck and back pain, painful shoulder grooving from brassiere straps, chronic intertrigo of the inframammary fold, and neuropathies caused by heavy breasts. The usual presentation of these patients is shown in Figure 1-A. The scientific evidence from high quality, randomized controlled trials indicates that reduction mammoplasty is effective at reducing breast hypertrophy related symptoms and improving quality of life (8-11). The results of a reduction mammoplasty on the same patient previous shown is seen on Figure 1-B.

Conservative therapies, such as physical therapy, weight loss and analgesics have been found to be ineffective in providing permanent relief of breast hypertrophy (1). In our study, the most frequent reason for lack of substantial weight loss after 6 months of conservative management was that they could not perform exercises because of the heavy breasts and associated back pain. In spite of this, the health insurance companies continue to request a trial at conservative management before surgery is approved.

Much has been written on the health burden of symptomatic macromastia, but little attention has been given to the economic burden (3). The economic impact of untreated surgical disease also deserves attention (12). It is believed that the lost productivity at the workplace should be given a dollar value using median wage rates from the region. In general, surgical management tends to be cost-effective in comparison with the cost of lost productivity (12-14).

In our study we measured the number of lost work days by women who had symptomatic macromastia while on conservative therapy. A significant difference (p<0.05) was found when compared to the same group of women after a reduction mammoplasty. Women on conservative management had to take a mean of 6 days from work because of back/neck pain while the same group of women after surgery only had to take a mean of 1 day from work because of such symptoms. If we assume that symptomatic women on conservative management require 5 days more away from work in comparison to their counterparts during the 6 month period, that would mean that they were absent 10 days/year more than their counterparts.

Using the median wage rates for women for 2019, from the Bureau of Labor Statistic, that represents an economic loss of \$1,642 annually per woman in conservative management (15).

Our findings were similar to that of other authors (16-17) who have reported a significant decrease in absenteeism at work after women with macromastia have breast reduction surgery. Though not evaluated in our study, presenteeism; the act of showing up to work but not operating at normal levels of productivity due to pain/illness is also a very costly problem among this group (16).

A randomized clinical trial of 100 patients who had macromastia reported that functional capacity, measured using the Stanford Health Assessment Questionnaire, improved after reduction mammoplasty (8). The patients were also evaluated for improvement of pain after breast reduction surgery using a visual analogue scale, where 0 represented no pain and 10 represented unbearable pain. The study (8) found that the mean pain intensity dropped in the lower back, from 5.7 to 1.3; in the shoulders, from 6.1 to 1.1; and in the neck, from 5.2 to 0.9. With such significant improvement in pain, it is understandable how the patient can become more productive and have less days lost from work.

The reports in the literature with one of the most widely used patient-reported outcome instruments in breast surgery, the BREAST-Q, indicate that breast reduction surgery significantly improves quality of life and physical well-being in women with macromastia (18-21).

The current American Society of Plastic Surgeons' Clinical Practice Guidelines (22) indicate that reduction mammoplasty has been shown to improve quality of life. As the document states "Given the lack of a lasting and effective nonoperative treatment for this condition, symptomatic breast hypertrophy is most often managed by reduction mammoplasty".

Conclusion

Women with symptomatic macromastia have significantly fewer days lost from work when a reduction mammoplasty is performed. Conservative management results in a higher cost in loss productivity.

Resumen

Objetivo: Comparar la cantidad de días perdidos de trabajar por mujeres con macromastia sintomática tratadas conservadoramente y después de cirugía de reducción mamaria. **Métodos:** Solicitamos a mujeres trabajadoras con macromastia sintomática que anotaran el número de días perdidos de trabajar

a consecuencia de dolor de espalda o cuello asociado a sus senos grandes, durante los 6 meses de manejo conservador requerido por el seguro médico. El manejo conservador incluyó terapia física, pérdida de peso y analgésicos. Una reducción mamaria se realizó después del período de manejo conservador. Luego de regresar al trabajo, nuevamente anotaran el número de días

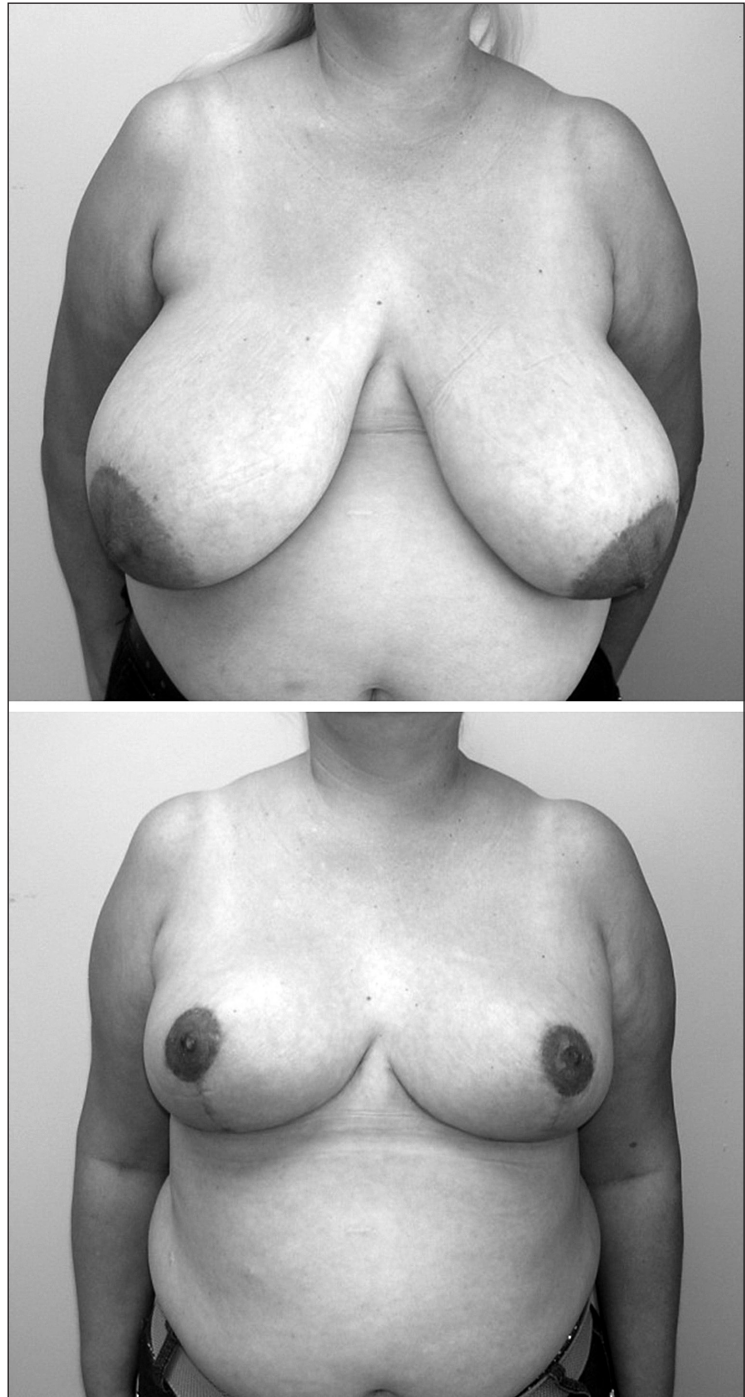


Figure 1-A. The usual presentation of a patient with symptomatic macromastia resulting from an increase in the volume and weight of breast tissue beyond normal proportions. **Figure 1-B.** The same patient after a bilateral reduction mammoplasty with a resection of 1,265 grams from each breast.

que faltaron al trabajo debido al dolor de espalda o cuello durante los próximos 6 meses. Obtuvimos también información demográfica básica. Resultados: Participaron 123 mujeres con macromastia sintomática. La edad media fue 31 ± 10 , el índice de masa corporal medio fue 29 ± 4 , tamaño de brasier promedio fue 38-D, 45% tenían una educación universitaria y 90% trabajaban a tiempo completo. El número medio de días perdidos de trabajar fue 6 ± 3 durante el manejo conservador y 1 ± 1 durante los 6 meses después de la cirugía, una diferencia que fue estadísticamente significativa ($p < 0.05$). Basado en el salario medio de mujeres para 2019, según reportado por la Oficina de Estadísticas Laborales, estos días representaron una pérdida económica de \$1,642 anual por mujer en manejo conservador. Conclusión: El tratamiento quirúrgico de la hipertrofia mamaria resulta en una disminución significativa en la pérdida de días de trabajo. El manejo conservador resulta en mayor costo en pérdida de productividad.

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