BACK PAIN: AN ASSESSMENT IN BREAST HYPERTROPHY PATIENTS

PAULO MAGALHÃES FERNANDES[1], MIGUEL SABINO NETO[2], DANIELA FRANCESCATO VEIGA[3], LUIS EDUARDO FELIPE ABLA[4], CARLOS DELANO ARAÚJO MUNDIM [5], YARA JULIANO[6], LYDIA MASAKO FERREIRA[7]

SUMMARY

Objective – To evaluate the influence of breast hypertrophy on the incidence of back pain and how much they can interfere in patients' daily activities. Methods – This was a cross-sectional analytic study in patients examined at the Outpatient Orthopedics and Plastic Surgery Departments at Samuel Libânio University Hospital in Pouso Alegre, MG. 100 women were examined, 50 presenting breast hypertrophy (study group) and 50 with normal breast size (control group). Breasts were classified according to Sacchini's criteria. The Numerical Rating Scale (NRS) and the Roland-Morris questionnaire were used in order to evaluate the magnitude of back pain and the limitations arising from these symptoms. Results – The mean age of the patients in the study group was 32.2 years and 32.7 for the control group. The scores in the NRS scale and Roland- Morris Questionnaire were higher in the study group when compared to the control group. Conclusion – The results achieved showed that back pain is more severe and determined more extensive limitations in the daily activities for patients presenting breast hypertrophy.

Keywords: *Back pain; Quality of life; Neck pain; Breast.*

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INTRODUCTION

Back pain is amongst the most frequent complaints of patients at orthopaedic examination, representing a common cause of work leaves[1]. Spinal pain is sometimes difficult to evaluate, because many factors can be associated to it, and, sometimes, no correlation is found between clinical and X-ray findings and symptoms reported[2].

Breast hypertrophy is described as an abnormal augmentation of the breasts, and it has been associated to the emergence of various symptoms related to musculoskeletal system, with spinal pain being the most frequent ones (Figure 1). This kind of pain may range from a simple discomfort to functional disability, with frequent indications to surgical treatment for reducing breasts volume[3-5]. The source of these symptoms may be postural changes resulting from gravity center changes, a consequence of breast augmentation, which causes exacerbation of the physiological curves of the cervical, thoracic and lumbar spine, additionally to keep cervical and thoracic muscles highly tensioned[6].

Several methods have been used to measure painful symptoms as well as restraints resulting from these symptoms. The use of standardized questionnaires, of which measurement properties have already been tested, enables us to evaluate patients' profiles through their individual perspectives, being thus possible to assess discomfort and disability determined by a disease or treatment[6,7].

This study intends to assess the influence of breast hypertrophy over painful spinal symptoms and also how much the usual daily activities of the patients can be compromised as a result of the presence of these symptoms.

METHODS

In the period of June 2005 to February 2006, 50 women with breast hypertrophy referred from Orthopaedics and Plastic Surgery outpatient services of Hospital das Clínicas Samuel Libânio, in Pouso Alegre (MG) were assessed. Other 50 women with normal sized breasts and similar sociodemographic characteristics, which were selected from the general population of the region, constituted the control group of the study. No restriction was made in terms of ethnicity, education level or social layer. Women aged between 18 and 59 years with body mass index (BMI) as low as 30 Kg/m^2, who had not been previously submitted to spinal or breast surgeries, were considered as candidates to the study. Women with BMI below 18.5 Kg/m^2, presenting with uncontrolled systemic diseases, who had delivered or were breastfeeding in the previous one-year period, with hypomastia or mammary asymmetry were excluded from the study. Selected women were enrolled only after signing the Free and Informed Consent Term. The study was approved by the committee on ethics in research of this institution.

Study conducted at the University of Vale do Sapucaí -- Hospital das Clínicas Samuel Libânio - Pouso Alegre - MG.

Correspondences to: Rua Cássio Carvalho Coutinho, 26 - Bairro Santa Elisa. Pouso Alegre-MG. CEP: 37550000 - Email:paulomf@uai.com.br

1. Master in Health Sciences by Minter - Interinstitutional Mastery Course UNIFESP/UNIVÁS. Orthopaedic Doctor, Department of Orthopaedics and Traumatology, Hospital das Clínicas Samuel Libânio -University of Vale do Sapucaí- UNIVÁS
2. Associate Professor of the Discipline of Plastic Surgery - UNIFESP
3. Doctor, Plastic Surgery Division, Hospital Clínicas Samuel Libânio - University of Vale do Sapucaí- UNIVÁS
4. Associate Professor, Discipline of Plastic Surgery, UNIFESP
5. Orthopaedic Doctor, Department of Orthopaedics and Traumatology, Hospital das Clínicas Samuel Libânio -University of Vale do Sapucaí- UNIVÁS
6. Chairman, Department of Biostatistics, UNIVÁS
7. Chairman, Discipline of Plastic Surgery, UNIFESP

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Breasts were rated using the Sacchini's index. In this classification, a normal breasts are regarded as those presenting measurements between 9 and 11 cm, hypertrophic breasts as those with measurements above 11 cm, and hypomastia, those measurements below 9 cm, in which each breast is individually measured[8] (Figure 2).

Figure 1 - *Woman with breast hypertrophy: watch for cervical muscles' and shoulder tension in order to keep an upright posture.*

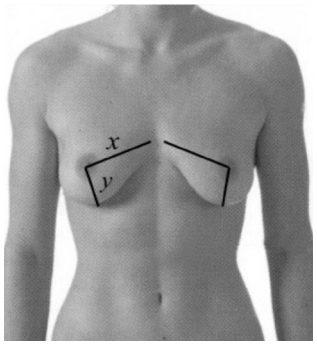

Figure 2 - *Sacchini's index = average between X and Y distances.*

The Numeric Scale (NRS) was employed to assess spinal pain severity[8]. The scale presents scores ranging from zero to ten, where the patient determines the level in which her pain is according to the scale (Figure 3). The scale was introduced to patients, which informed the number of the scale that best described the level of their pain severity. Reports of pain on cervical, thoracic and lumbar spine segments were taken into account.

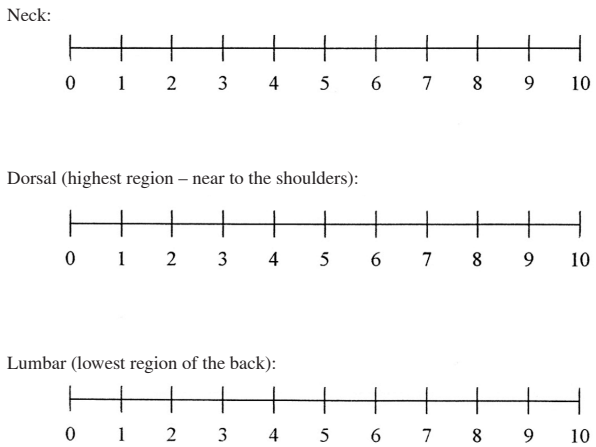

Figure 3 - *Numeric scale for pain severity assessment (NRS)*

The Roland-Morris Questionnaire[9,10] enables to evaluate physical restraints resulting from reported pain on lumbar spine and has been used to evaluate restraints resulting from other spinal segments, as well. The questionnaire is composed of 24 yes/no questions, where each positive answer corresponds to a score. The final score is determined by the sum of the values obtained. Values closer to zero represent the best results, that is, fewer restraints, while values closer to 24 represent the worst results, that is, more restraints. The questionnaire was applied as an interview, performed by only one researcher[11].

For statistical analysis of the results, the Mann-Whitney's test was used[12], in order to compare any potentially existent differences between data obtained for control and study groups. The test was applied alone in order to assess differences regarding age, NRS and Rolland-Morris questionnaire scores. For comparing BMI values for both groups, the Student's t test was employed[12]. Null hypothesis rejection level was determined as 0.05 or 5%.

On the line below, please check where you believe your back pain represents today. Zero means absence of pain and ten means excruciating pain.

RESULTS

Among women with breast hypertrophy (study group), the average age was 32.2 years (± 8.2 years) and the average age for control group was 32.7 years (± 11.1 years). Mean BMI for study group was 25.8Kg/m^2 (± 2.59 Kg/m^2) and for control group, 22.3 Kg/m^2 (±2.87 Kg/m^2). We noticed no statistically significant difference between assessed groups regarding age, while there was a statistically significant difference for BMI ($p<0.001$), with the hypertrophy group presenting a higher BMI than control group (Table 1).

	GROUP	N	Average	Median	Standard	Minimum	Maximum	p-value
AGE	Control	50	32.72	30.00	11.10	20.00	56.00	
	Hypertroph	50	32.20	31.50	8.17	19.00	50.00	0.790
	Total	100	32.46	30.50	9.70	19.00	56.00	
WEIGHT	Control	50	59.48	58.50	8.31	44.00	80.00	
	Hypertroph	50	65.33	66.25	7.11	50.00	80.00	< 0.001*
	Total	100	62.41	63.25	8.24	44.00	80.00	
HEIGHT	Control	50	1.63	1.63	0.07	1.50	1.77	
	Hypertroph	50	1.59	1.61	0.07	1.41	1.70	0.003*
	Total	100	1.61	1.62	0.07	1.41	1.77	
BMI	Control	50	22.31	22.00	2.98	18.20	29.00	
	Hypertroph	50	25.88	26.07	2.59	20.55	30.00	< 0.001*
	Total	100	24.09	24.42	3.31	18.20	30.00	

Table 1 - *Comparison of the groups regarding Age, Weight, Height, and BMI*

When groups were compared for NRS scores, Roland-Morris Questionnaire and pain scale (NRS), a statistically significant difference was found for all scores. In the group of women with breast hypertrophy, only one patient reported absence of pain in all segments of the spine, while, in control group, 12 women (24%) reported none of these symptoms. For Roland-Morris Questionnaire, the score zero occurred in 8% of the women with breast hypertrophy, and in 50% of the women in control group.

The results of NRS pain assessment and the results of the analysis of Roland-Morris questionnaire are shown on Table 2.

DISCUSSION

Occasionally, orthopaedic doctors are requested to provide a legal opinion about the need of surgical treatment for breast reduction in patients with symptomatic breast hy-

	GROUP	N	Average	Median	Minimum	Maximum	p-value
CERVICAL PAIN	Normal mammary	50	1.74	0.00	0.00	10.00	
	Mammary hypertrophy	50	5.48	6.00	0.00	10.00	< 0.001*
	Total	100	3.61	3.00	0.00	10.00	
DORSAL PAIN	Normal mammary	50	1.74	0.50	0.00	10.00	
	Mammary hypertrophy	50	6.50	8.00	0.00	10.00	< 0.001*
	Total	100	4.12	3.00	0.00	10.00	
LUMBAR PAIN	Normal mammary	50	2.26	2.00	0.00	10.00	
	Mammary hypertrophy	50	6.18	7.00	0.00	10.00	< 0.001*
	Total	100	4.22	3.00	0.00	10.00	
ROLAND MORRIS	Normal mammary	50	1.24	0.50	0.00	6.00	
	Mammary hypertrophy	50	10.54	10.50	0.00	24.00	< 0.001*
	Total	100	5.89	3.00	0.00	24.00	

Table 2 - *Comparisons of groups regarding variables of pain as evaluated by NRS, and restraints caused by these symptoms as evaluated by Roland-Morris Questionnaire*

pertrophy. Many times, this professional is unaware of the objective and subjective criteria for breast assessment, or even of the severity of breast hypertrophy effects on musculoskeletal system.

Breast hypertrophy has been known and disseminated due to the aesthetic changes it causes on women; however, in addition to aesthetic changes, this can determine serious physical problems, which can damage these patients' health and quality of life[5]. Physical changes caused by increased breast weight are due to the change of patients' gravity center, leading to sharper physiological curves of the spine, with increased shoulder and cervical spine muscles tension[4].

Previous studies evidenced that breast hypertrophy patients' major complaints, in addition to the aesthetic aspect, are musculoskeletal system pain, with the most common ones being back pain, and these symptoms have been constituting factors for indicating breast size reduction in those patients[3-5].

In recent years, great emphasis has been given to patient's opinion about symptoms and restraints in their lifestyles due to diseases or treatments. For evaluating changes resulting from diseases or treatments, a number of questionnaires were developed, which allow for analyzing such changes from the perspective of the very patient[12].

Efforts have been made to quantify pain symptoms from a patient's point of view. Thus, scales and instruments have been developed and were shown to be effective for assessing those symptoms. Several studies addressing these symptoms related to breast hypertrophy have been performed with the use of non-validated instruments, and ultimately have shown to be inconsistent for comparisons[4,13,14]. The evaluation of spinal pain and restraints resulting from these symptoms in patients with breast hypertrophy, assessed from a patient's point of view, and using instruments of which measurement properties have already been tested, lends higher reliability to the study. There are a scarce number of studies published in literature addressing spinal symptoms in patients with breast hypertrophy, and the restraints resulting from these symptoms, using previously validated scales and questionnaires[3,5].

In this study, we applied a strict inclusion criterion, where reported symptoms were correlated to breast size. Objective breasts evaluations, using Sacchini's criteria, allow for standardizing measurements, with potential ability to reproduce and compare results. There was no significant difference between ages. The BMI for the group with breast hypertrophy was 25.8 kg/m^2, characterizing overweight, but this is a common data among breast hypertrophy patients, and tend to be higher in more significant hypertrophies. This can be due to the fact that breast size is already a factor for a heavier weight, and to these patients presenting physical and emotional discomfort, restraining physical activities[4,5,15].

The Analogous Numeric Scale (NRS) is a simple and efficient method for assessing pain severity from a patient's perspective, and it is used in several medicine areas for assessing these symptoms in a disease or treatment responsiveness research. This scale was shown to be more reliable for assessing pain in our population when compared to other pain assessment scales[16]. These scales have been used for assessing pain severity in breast hypertrophy patients. It has been used for assessing spinal pain in patients with breast hypertrophy and the average pain score was six[5]. Freire[3] assessed these symptoms on spine segments, and data were similar to those found in our study, where the average score was 5.4 for cervical spine, 6.5 for thoracic spine, and 6.1 for lumbar spine. They described a significant reduction of the NRS scores after surgery was performed for reducing breast size.

The Rolland - Morris questionnaire is one of the most indicated questionnaires for assessing restraints resulting from back pain[17,18]. This questionnaire was translated and validated for use in Brazil. It presents a single value for evaluation and a score 11 is determined as indicative of important disabling changes[10]. In this study, we noticed that patients with breast hypertrophy show more significant restraints, with an average value of 10.5 when compared to the group of patients with normal breasts, which showed an average of 1.2. In a study using this instrument to assess reductive mammoplasty results, a major restraints reduction was seen, as measured by this questionnaire, in which the mean index dropped from 5.9 to 1.2 after surgical treatment[3].

This study shows the importance of physical symptoms associated to breast hypertrophy. Previous studies showed that reductive mammoplasty is the recommended treatment, and conservative therapies such as weight lose and physical therapy, additionally to other methods, are not efficient for symptoms relief[3,14]. Unfortunately, the healthcare sector, both public and private, do not recognize breast hypertrophy as deleterious for these patients' health, being recognized only as an aesthetic change, and reductive mammoplasty as a cosmetic procedure, only, many times requiring patients to seek legal help to prove their symp-

toms and thus be granted with authorization for surgery.
Studies using a multidisciplinary approach, with the use of validated instruments, may generate a broader knowledge of various aspects in a pathology, which will be converted into useful conclusions to professionals and to healthcare system and into benefits for patients. It is important to recognize the criteria for breast hypertrophy definition and classification, as well as its implications on musculoskeletal system, because, many times, this disease is seen just as for its aesthetic aspects for a major portion of doctors, health insurances and public healthcare system.

CONCLUSION

Patients with breast hypertrophy present with a more severe back pain, as well as an important restraint in their daily activities when compared to patients with normal breasts.

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