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The characteristic of Mammary Glands of Women of Yakuts in Age Aspect and Its Value in Multiplicating Mammoplasty

ABSTRACT

In this research the group of authors performed a topomorphometric analysis of a breast tissue of Yakut women who decided to change their breast shape. The data obtained allow to systemize a tactics in performing the surgical intervention.

Keywords: a breast tissue, Yakut women, mammoplasty.

INTRODUCTION

According to contemporary representations breast is considered to determine significantly interpersonal relations between genders and aspiration of young and adult women for breast maximally close for the common standards of size and form. [2] [5]

It is evident for our region that physical and pubertal development of girls who live in extremely continental climate has particular qualities which need detailed and differentiated study. It is proven that breast development, development of hairiness of the pubis and armpit, the first occurrence of menstruation of Yakut and Caucasoid girls outpace indicators of the girls of the other somatotypes in the studied periods of ontogenesis. Later development of secondary sexual characteristics of Yakut girls in contrast with Caucasoid girls is also detected. [1]

Thus, definition of precise standard diagnostics of the regional norm of breast and contiguous topographic layers and form of thorax is becoming increasingly important. The diagnostics significantly affects the choice of the optimal method of augmentation mammoplasty and determines positive final result.

Considering the foregoing and the lack of information on the individual variability of form, size and topometrical characteristics of breast of the women living in Republic of Sakha (Yakutia) in available Russian and foreign sources the authors determined the following **aim of the research:** revealing individual typological variability of form, size and topometrical characteristics of breast of Yakut women with taking into account age.

MATERIALS AND METHODS

Morphometry of breast was performed at 72 Yakut women aged from 20 to 40 years old who attended a private clinic "Victory Clinic" (Yakutsk) for correcting mammoplasty with the principles of voluntariness, individual rights and freedoms guaranteed by Articles 21 and 22 of the Constitution. The examinees were divided into the following age groups: I group from 20 to 25 years (14 women), II group - from 26-30 years (24 women), III group - 31-35 years (21 women), IV group - 36 -40 (13 women). The studied groups included persons with no subjective complaints on the state of the reproductive sphere, with no medical history of menstrual dysfunction and with no concomitant pathology of reproductive system. The large stout compass, centimeter linen tape and sliding dividers were used for morphometric measurement.

Measuring was carried out on the system “Body Logic” (Mentor Medical Systems B. V. - USA). The following indicators were recorded: Height, weight, age and ethnicity; The chest circumference at two levels; Height and width (vertical and transverse dimensions) compared with the left and right breast; Distance of the nipple-areola complex from the jugular fossa; Distance from the center of the collarbone to the nipple in comparison with the left and right sides of the breast; The thickness of the skin-glandular breast folds on the medial, lateral and upper poles; Dimensions of the nipple-areola complex, its vertical and transverse size; Extensibility of breast tissue in the lower pole; Fixing of the breast form, inspection for chest asymmetry, visual deformations, presence or absence of distortions of the spinal column. The results obtained in the study were entered into a spreadsheet Excel 7.0 and processed using standard statistical software package Statistica 8. The arithmetic mean - M , the average error of the arithmetic mean - m , were calculated for each of the studied parameters.

RESULTS AND DISCUSSION

Analysis of obtained data showed that the body weight of the surveyed women increases to the age of 35-40 years. Body mass index (BMI) was also higher in the older age group. The lowest BMI were noted in the first and the second age group (Table 1). Dimensional indicators of transverse diameter of the chest at the level of submammary folds and at the level of the nipples were also higher in the older age group. Among the surveyed contingent of Yakut women round shape breast is most often found in the third age group (12,5%); broad form of breast in the first group (22,70%); conical shape in the second group (18,0%); tubular form is found only in the first (1.3%) and the second (1.3%) age groups. Visual asymmetry between right and left sides of breast is observed in the first age group (26-35 years) (Table 2). The distance from the jugular fossa to the nipple increases to the fourth group, in comparison with the first group this indicator is 1,3 times greater, with the second group is 1.2 times greater and with the third group is 1.1 times greater. Also the difference in the average indicators of the distance from the middle of the collarbone to the nipple are noted in the studied groups, so the greatest magnitudes are marked in the fourth group, the lowest in the first group. Appreciable asymmetry of these indicators is found in the age of 20-25 years. The transverse dimension of the base of breast (from 12,2 to 13,4 cm) and a vertical dimension of the base of breast (from 11,5 to 12,5) are increased to 36-40 years. The thickness of the skin-glandular folds at the lateral, medial and upper poles also tends to increase with age, and the higher scores were recorded in the left side in all groups. Comparison of the indicators between the poles revealed the predominance of the thickness in the area of the upper pole in all age groups. There is a tendency of increasing of the distance between the nipple and submammary fold with age, from 5,5 to 6,5 without tension and from 7,5 to 8,4 with pulling the skin. However, a significant difference in the average indicators of the distance between the nipple and submammary fold is noted in the age groups of 20-25 years and of 26-30 years, and besides with the right side bigger than the left side. At the same time in the older age groups, these figures are relatively bigger on the left side (Table 3).

Submammary fold as the anatomical structure is a key part that defines the aesthetic breast augmentation and mastopexy, this structure is the foundation on which is based the construction of mammoplasty [4]. Thus, the asymmetry is less noticeable in the older age group, as well as

the outward signs of asymmetry of the chest or spinal column. In the other age groups, the incidence of asymmetries is comparable, while the maximum number of asymmetries of the chest is noted in the second group - funnel chest, keel chest, incorrect posture (Table 1).

Analyzing of the size of the areola on the vertical and lateral lines in comparison of the left and the right sides shows tendency of increasing of size with age (Table 4). Moreover, the size on the vertical lines has a marked tendency to increase, in comparison with the transverse line. Minimal transverse size of the areola is found in the first age group (3,14 cm.), maximal is found in the fourth age group (4,26 cm.). The minimal vertical dimension is also noted in the first age group (3,25 cm.) and maximal is noted in the fourth (4,38 cm.). The asymmetry between the right and left sides of the breast is fixed, it is more evident in its vertical dimension with increasing of the age (from 0,07 cm. to 0,15 cm.), although the maximal asymmetry in the transverse dimension is noted in the second age group of 26-30 years (from 0 to 0,08 cm.).

CONCLUSIONS

Thus, as a result of the study the research group determined topomorphometric indicators of breast of Yakut women in the different age groups. Among the surveyed contingent of Yakut women wide shape is most often found in the first group, conical shape – in the second group (18,0%), round shape of breast is more often in the third group (12,5%). Tubular form is found only in the first (1,3%) and the second (1,3%) age groups. More evident visual asymmetry of breast between the left sides is observed in the age group of 26-35 years. It is found that with sufficient symmetry of form of mammary glands in the majority of women in the studied groups there are many cases of asymmetry of the structure of the chest, probably due to rachitic factor widespread in our region. Proportional increase of the distance of the nipple-areola complex with increasing age relative to the jugular fossa and clavicle show ptosis of the breast tissue. The growth of the thickness of skin-glandular fold is more pronounced in the fourth age group (36-40 years), it indicates hypertrophy of breast tissue, this fact is important to be taken into account while calculating the volume of the future implant. Indicator of the stretchability of the lower pole of the breast is important for planning surgical intervention, because it shows the state of the skin pocket for the implant. This value also increases with age, and indicates the presence of breast ptosis, predominantly of the skin genesis. Also the great importance for the reconstruction of form of breast has asymmetry of the level of submammary fold, which is expressed in the third studied group (12,5%) of 31-35 years. Respectively, for this group the reconstruction of submammary fold, its symmetrization and strengthening are often. Naturally, the breast tissue susceptible to natural gravitational ptosis with the age, the same things happen with the nipple-areola complex, so in the fourth age group the maximal lateral and vertical dimensions are marked. While planning the surgical intervention it is appropriate to reduce these dimensions by periareolar annexation.

Table 1. Average indicators of some anthropometric data of Yakut women in different age groups ($M \pm m$ (min-max)).

Parameters (mean values)	20-25 years $M \pm m$ (min-max)	26-30 years $M \pm m$ (min-max)	31-35 years $M \pm m$ (min-max)	36-40 years $M \pm m$ (min-max)
Body length (cm.)	164,0 $\pm$ 5,4 (154,0-175,0)	162,1 $\pm$ 4,4 (153,0-174,0)	165,2 $\pm$ 5,7 (152,0-175,0)	162,8 $\pm$ 5,6 (156,0-176,0)
Body mass index (kg/m ²)	19,4 $\pm$ 2,1 (16,1-24,2)	19,0 $\pm$ 1,6 (16,0-23,2)	21,0 $\pm$ 2,0 (17,6-25,1)	22,6 $\pm$ 3,5 (17,2-29,0)
Weight (kg.)	52,4 $\pm$ 6,9 (43,0-70,0)	50,1 $\pm$ 4,7 (42,0-61,0)	57,0 $\pm$ 5,3 (50,0-60,7)	60,2 $\pm$ 10,6 (48,0-83,0)
Chest circumference at the level of the inframammary fold (cm.)	71,9 $\pm$ 3,6 (66,0-78,0)	71,6 $\pm$ 2,7 (66,0-79,0)	75,7 $\pm$ 4,2 (69,0-84,0)	80,7 $\pm$ 7,6 (72,0-92,0)
Chest circumference at the level of the nipples (cm.)	78,1 $\pm$ 4,3 (72,0 -85,0)	77,2 $\pm$ 4,3 (71,0-87,0)	82,7 $\pm$ 5,0 (74,0-93,0)	88,3 $\pm$ 8,4 (80,0-103,0)

Table 2. Forms of breast and qualitative indicators of asymmetries of Yakut women in different age groups.

No	Name of parameter	20-25 years	26-30 years	31-35 years	36-40 years
1	Shape of breast: Round	11,1%	8,3%	12,5%	2,7%
	Wide	22,70%	5,50%	5,50%	5,50%
	Tubular	1,30%	1,30%	0	0
	Conical	4,10%	18,00%	11,10%	9,70%
2	Visual asymmetry of the breast	9,70%	13,80%	13,80%	6,90%
3	Asymmetry of the level of submammary fold	11,10%	11,10%	12,50%	4,10%
4	Asymmetry of the level of the nipple-areola complex	8,30%	11,10%	13,80%	8,30%
5	Visual asymmetry of the chest and the spinal column (funnel chest, keel chest, incorrect posture)	11,1%	16,6%	12,5%	6,9%

Table 3. Parametric indicators of breast of Yakut women in different age groups (M±m (min-max)).

№	Name of parameter (mean values)	20-25 years M±m (min-max)		26-30 years M±m (min-max)		31-35 years M±m (min-max)		36-40 years M±m (min-max)	
		Right	Left	Right	Left	Right	Left	Right	Left
1	Distance from the jugular fossa to the nipple (cm.)	15,6 ±1,8 (11,0-19,5)	17,6 ±1,7 (15,5-21,5)	17,5 ±1,7 (11,8-20,5)	17,6 ±1,8 (11,8-20,5)	18,6 ±0,9 (16,0-20,0)	18,5 ±1,1 (16,0-21,0)	20,2 ±2,5 (17,0-25,0)	20,1 ±2,2 (17,0-24,0)
2	Distance from the level of the middle of the clavicle to nipple (cm.)	15,6 ±2,3 (11,0-19,5)	15,8 ±2,2 (11,0-19,5)	16,0 ±1,7 (10,0-19,0)	16,3 ±1,9 (10,0-19,5)	17,1 ±1,1 (15,0-19,5)	17,1 ±1,4 (15,0-20,0)	18,8 ±2,3 (15,0-23,0)	19,0 ±2,3 (15,5-23,5)
3	The transverse dimension of the base of the breast (cm.)	12,3 ±0,8 (11,0-14,0)	12,2 ±0,8 (11,0-14,0)	12,2 ±0,8 (10,0-14,0)	12,1 ±0,9 (10,0-14,0)	12,6 ±0,9 (11,5-14,5)	12,7 ±0,9 (11,5-14,5)	13,2 ±0,8 (12,5-14,5)	13,4 ±0,9 (12,5-15,0)
4	The vertical dimension of the base of the breast (cm.)	11,9 ±1,1 (10,0-14,0)	11,5 ±1,3 (9,5-14,0)	11,4 ±1,0 (10,0-13,0)	11,3 ±0,9 (10,0-13,0)	12,0 ±0,8 (10,5-14,0)	11,9 ±0,9 (10,5-14,0)	12,3 ±0,7 (11,0-13,0)	12,5 ±0,9 (11,0-14,5)
5	The thickness of the skin and glandular fold of the medial pole (cm.)	2,7 ±0,5 (2,0-3,5)	2,7 ±0,6 (1,5-3,5)	2,5 ±0,6 (1,5-4,0)	2,6 ±0,8 (1,0-4,0)	2,9 ±0,6 (2,0-4,0)	2,9 ±0,6 (2,0-4,0)	3,5 ±0,7 (2,0-4,5)	3,5 ±0,7 (2,5-4,5)
6	The thickness of the skin and glandular fold of the lateral pole (cm.)	2,7 ±0,6 (2,0-4,0)	2,8 ±0,7 (1,5-4,5)	2,6 ±0,8 (1,5-4,5)	2,7 ±0,7 (1,5-4,5)	3,2 ±0,6 (2,0-4,0)	3,2 ±0,7 (2,0-4,5)	3,4 ±0,4 (3,0-4,0)	3,7 ±0,6 (3,0-5,0)



7	The thickness of the skin and glandular folds of the upper pole (cm.)	2,9 ±0,6 (2,0-4,0)	3,0 ±0,8 (1,5-4,5)	2,8 ±0,8 (1,5-4,0)	3,0 ±0,9 (1,5-4,5)	3,1 ±0,6 (2,0-4,0)	3,3 ±0,7 (2,0-4,5)	3,7 ±0,3 (3,0-4,5)	3,8 ±0,5 (3,0-4,5)
8	Distance from the nipple to the submammary fold without tension (cm.)	5,7 ±1,6 (3,5-9,5)	5,5 ±1,5 (3,5-9,5)	5,6 ±0,9 (4,0-7,5)	5,5 ±0,9 (3,5-7,5)	5,8 ±1,1 (4,0-9,0)	6,0 ±1,2 (4,0-9,0)	6,3 ±1,0 (5,0-9,0)	6,5 ±1,2 (5,0-9,5)
9	Distance from the nipple to the submammary fold with pulling (cm.)	7,6 ±1,8 (5,0-11,5)	7,5 ±1,9 (5,0-11,5)	7,7 ±1,0 (6,0-10,0)	7,6 ±1,1 (5,5-10,0)	8,0 ±0,8 (7,0-10,5)	8,2 ±0,9 (6,5-10,5)	8,3 ±1,2 (5,0-10,0)	8,4 ±1,3 (5,5-11,0)



Table 4. Comparative parametric data of size of the areola of the breast of Yakut women in different age groups ($M \pm m$ (min-max)).

№	Parameter (mean values)	20-25 years		26-30 years		31-35 years		36-40 years	
		Right	Left	Right	Left	Right	Left	Right	Left
1	The transverse dimension of the areola (cm.)	3,14 $\pm 1,1$ (1,5-5,0)	3,21 $\pm 1,3$ (1,5-6,0)	3,28 $\pm 0,5$ (2,0-4,0)	3,24 $\pm 0,5$ (2,0-4,0)	3,45 $\pm 0,6$ (2,0-4,5)	3,40 $\pm 0,7$ (2,0-5,0)	4,26 $\pm 1,0$ (3,0-7,0)	4,11 $\pm 1,1$ (3,0-6,0)
2	The vertical dimension of the areola (cm.)	3,25 $\pm 1,0$ (2,0-4,5)	3,25 $\pm 1,1$ (2,0-5,0)	3,28 $\pm 0,6$ (2,0-4,0)	3,20 $\pm 0,5$ (2,0-4,0)	3,42 $\pm 0,7$ (2,0-4,5)	3,45 $\pm 0,7$ (2,0-5,0)	4,38 $\pm 0,8$ (3,0-6,0)	4,30 $\pm 0,8$ (3,0-6,0)
3	Difference of the transverse dimension (cm.)	0		0,08		0,03		0,04	
4	Difference of the vertical dimension (cm.)	0,07		0,04		0,05		0,15	



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