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Short Communication
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Anatomical Parameters for Nipple Position in Males

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In this paper we present anatomic parameters for nipple position in males. Large form of gynecomastia with significant ptosis, after massive weight loss, and in female to male trans sexual patients, pose a challenge to surgeon with respect to relocation of the nipple on the chest wall. In order to establish guidelines for the placement of the nipple we set out to determine these anatomic parameters. Fifty-two male between the ages of 17 years to 78 years were chosen for this study. The males selected with ideal body weight and without evidence of gynecomastia. The distance from the sternal notch to the nipple, the sternal line to the nipple, the midclavicular point to the nipple, the midaxillary line to the nipple and the acromion point to the nipple was recorded. The mean distance was determined for each category. The validity of these values was confirmed with statistical analysis. We have determined the nipple position in males to be approximately 12 cm from midsternal line and 15cm from Mid-clavicle point and 22 cm from sternal notch and 14 cm from xyphoid. The breast is considered a symbol of femininity and numerous studies have addressed the aesthetic proportion of nipples and areolae in women [1-4]. Although a need exists for plastic surgeons to consider nipple position in men in certain situations, literature pertaining to the anatomic feature of male nipples is limited. Breast reduction during the gender reassignment process for biological women requires movement of the nipple to a new position [5-8]. The new nipple position should be chosen carefully to achieve a male chest that appears natural. In addition, during treatment of gynecomastia, the nipple position and areola size should be arranged within the normal morphologic ranges for men [9-11]. In the study we used landmarks such as sternal notch, midsternal line, midaxillary line, midclavicle point, acromion point and xyphoid.

Methods

Participants

Fifty-two healthy Iranian were included in the study, which was performed from august 2016 to august 2017. All study participants were volunteers. The study was performed according to the institutional ethical guidelines of Shahid Beheshti University of Medical Sciences.

Measurements

The anamic landmarks utilized for measurement purposes were distance the midsternal line

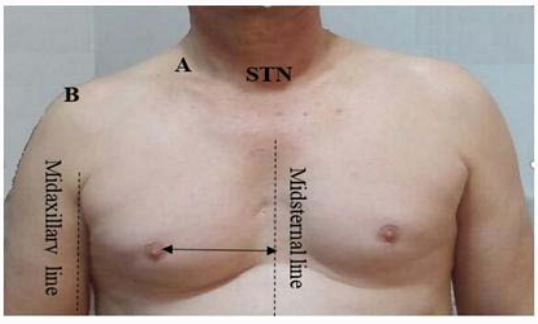

Figure 1: Nipple and midaxillary line to the nipple.
1. STN: Sternal notch
2. A: Midclavicular point
3. B: Acromion point

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Table 1: Statistical analysis.

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
nipple	52	100.00%	0	0.0%	52	100.0%
nrsternum	52	100.0%	0	0.0%	52	100.0%
nlsternum	52	100.0%	0	0.0%	52	100.0%
nrclavicular	52	100.0%	0	0.0%	52	100.0%
nlclavicular	52	100.0%	0	0.0%	52	100.0%
midclavicular	52	100.0%	0	0.0%	52	100.0%
acromion	52	100.0%	0	0.0%	52	100.0%
nracromion	52	100.0%	0	0.0%	52	100.0%
nlacromion	52	100.0%	0	0.0%	52	100.0%
axillary	52	100.0%	0	0.0%	52	100.0%
nrraxillary	52	100.0%	0	0.0%	52	100.0%
nrlaxillary	52	100.0%	0	0.0%	52	100.0%
sternum	52	100.0%	0	0.0%	52	100.0%
nrxyphoid	52	100.0%	0	0.0%	52	100.0%
nlxyphoid	52	100.0%	0	0.0%	52	100.0%
age	52	100.0%	0	0.0%	52	100.0%

to the nipple, sterna notch to the nipple, the midclavicle point to the nipple, the acromion point to the nipple and midaxillary line to the nipple (Figure 1). The following parameters were measured by one examiner, with the same measuring tap in the same room, with temperature maintained at 25°C.

Results

The age range of study participants was 17 years to 78 years. (Mean 45 years) Mean distance from midsternal line to the nipple was 12 cm. Mean distance from sternal notch to the nipple was 22 cm. Mean distance from midclavicle point to the nipple was 15 cm. Mean distance from acromion point to the nipple was 20 cm (Table 1-5). Mean distance from xyphoid to the nipple was 14 cm. Mean height of the sternum was 14.6 cm. The ratio between the sternum height and the nipple to midsternal line was 1.21. The ratio between the sternum height and the nipple to midclavicle point was 0.97 (~1).

Discussion

In the medical literature female nipples have been given substantially more attention than male nipples. Although breast feeding which is the function of the nipple and areola is important for women as a symbol of maternity and feminity. This function does not apply to men. Moreover, disease involving the nipple and areola occur more frequently in women [12]. However, unlike women, men commonly expose their nipples during recreational activities or exercise and therefore patient satisfaction with the aesthetic appearance of nipple and areola after female-to-male gender reassignment or gynecomastia procedures is important. Because men do not have underlying breast to serve as a cosmetic buffer, morphologic abnormalities of the nipple and areola may be more obvious and can directly affect the appearance of the chest. Therefore, we believe that studies of male nipples are as important as studies of female nipples. The qualitative information about general characteristics presented in this study may be useful for intuitive adjustment. In our opinion, patients are more likely to be satisfied when surgeons intuitively adjust the nipple position per their aesthetic judgment, rather than adhering to standards obtained through theoretical calculations reported previously.

Table 3: Report.

	nracromion	nlacromion	axillary	nzraxillary	nzlaxillary
Mean	20.646	20.729	36.91	11.394	11.475
Std. Deviation	1.9341	1.9736	2.5735	1.263	1.3390
Minimum	15	15	31	9	9.0
Maximum	25	25	43	14	14

Table 4: Report.

	nrraxillary	nrlaxillary	sternum	nrxiphoid	nlxiphoid
Mean	8.165	8.177	22.288	14.783	14.808
Std. Deviation	1.1677	1.2981	1.4731	1.5357	1.5030
Minimum	6.5	6.0	20.0	10.5	10.5
Maximum	12.0	12.0	25.5	17.3	17

Table 5: Report.

	age
Mean	45.481
Std. Deviation	15.2245
Minimum	17.0
Maximum	78

- nrsternum: right nipple to sternum
- nlsternum: left nipple to sternum
- nrclavicular: right nipple to clavicle point
- nlclavicular: left nipple to clavicle point
- nracromion: right nipple to acromion point
- nlacromion: left nipple to acromion point
- nrlaxillary: left nipple to mid axillary line
- nrraxillary: right nipple to mid axillary line
- nrxyphoid: right nipple to xyphoid
- nlxyphoid: left nipple to xypho

Conclusion

Findings of the present study provide quantitative guidelines for decisions on appropriate nipple position. The combined application of those guidelines and the surgeon's intuitive adjustment should optimize surgical result.

Table 2: Report.

	nipple	nrsternum	nlsternum	nrclavicular	nlclavicular	midclavicular
Mean	23.812	12.29	12.31	16.938	17.05	15.202
Std. Deviation	2.6887	2.4675	2.4715	1.5792	1.5971	1.6217
Minimum	17.6	8.8	8.8	14.0	14	11.5
Maximum	29.6	23.0	23.0	21.0	21	20

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