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Anatomy

MORPHOMETRIC STUDY OF EAR LOBULE OF MEDICAL STUDENTS IN JAMMU AND KASHMIR

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ABSTRACT

INTRODUCTION: Ear lobule is the lowest part of auricle and it is soft. Lobule parameters are important for plastic surgeons and in forensic medicine.

MATERIALS AND METHODS: The study consists of 25 male and 25 female students between the age group of 18 to 22 years. The purpose of study was explained to them and written informed consent was taken.

RESULT AND CONCLUSION: This study provides the mean values of different ear lobule indices of right and left sides in the medical students of jammu and Kashmir. The study may have value in determining ear anomalies and variations and help plastic surgeons in reconstructive surgeries post trauma, congenital malformations etc.

KEYWORDS : Ear Lobule, lobule height, lobule width, lobule index

INTRODUCTION

Ear lobule is the lowest part of auricle and it is soft. It does not contain cartilage and is composed only of a fold of skin with enclosed connective tissue[1]. The ear lobule is the last part of the auricle to develop[2] . Lobule parameters are important for plastic surgeons who aim to achieve a proper balance between right and left earlobes in reconstruction surgeries. The ear lobule morphometery gives information on age and sex and plays a valuable role in forensic investigation. Initially ear lobule parameters were studied for the surgical treatment of congenital deformities and reconstruction[3]. Now the ear lobules are also used in otomorphology for identification. Age dependent changes in lobules and its influence on individual identification through photographs or ear prints is of significance in forensic medicine and criminology[4].

MATERIALAND METHOD:

the study was carried out on 50 first year medical students in the Department of Anatomy, SKIMS Medical College, Srinagar with no evidence of congenital ear anomalies or previous ear surgeries and heavy earring wearers were also excluded. The study consists of 25 male and 25 female students between the age group of 18 to 22 years. The purpose of study was explained to them and written informed consent was taken.

ANTHROPOMETRIC MEASUREMENTS:

Each subject was made to sit in a natural head position on a chair with a backrest and positioned the head such that the subject looks straight forward with lower border of the eye sockets in the same plane as the external auditory meati - Frankfurt horizontal plane. Bilateral measurements of ear lobules were taken in centimeters. All the parameters were taken by using standard vernier caliper.

FOLLOWING PARAMETERS OF EAR LOBULE WERE TAKEN:

Lobule height: along a vertical line drawn from the intertragic incisure to the caudal tip of lobule.

Lobule width: maximum breadth of ear lobule anteroposteriorly.

Lobule index: lobule width/lobule height × 100.

RESULT :-

Table 1: Mean And Standard Deviation Of Ear Lobule Morphometry Of All Students

	Right Ear lobule	Left Ear lobule	P value
Dimensions			
Lobule Height	1.724 +/_ 0.341999	1.7 +/_ 0.319438	>0.05
Lobule Width	1.934 +/_ 0.270004	1.892 +/_ 0.321882	>0.05
Lobule Index	116.27 +/_ 27.20135	114.088 +/_ 23.00266	>0.05

The table 1 shows that the mean height of both ear lobules in all students is equal while as the width of right ear lobule is more than the left ear lobule but the difference is insignificant. The ear lobule index is more of right ear than left and difference is insignificant.

Table 2: Mean And Standard Deviation Of Ear Lobule Morphometry Of Male Students

	Right Ear lobule	Left Ear lobule	P value
Dimensions			
Lobule Height	1.62 +/_ 0.361709	1.62 +/_ 0.331662	>0.05
Lobule Width	1.988 +/_ 0.181016	1.824 +/_ 0.280297	<0.001
Lobule Index	127.824 +/_ 27.81509	115.856 +/_ 23.00687	<0.05

The table 2 shows that the mean height of right and left lobules of male students is equal while as the mean width of right ear lobule is more than left and the difference is highly significant. The ear lobule index is more on right side than the left and difference is significant.

Table 3: Mean And Standard Deviation Of Ear Lobule Morphometry Of Female Students

	Right Ear lobule	Left Ear lobule	P value
Dimensions			
Lobule Height	1.828 +/_ 0.29229	1.78 +/_ 0.291548	>0.05
Lobule Width	1.88 +/_ 0.331662	1.96+/_ 0.351188	>0.05
Lobule Index	104.716 +/_ 21.42109	112.32 +/_ 23.33374	>0.05

The table 3 shows that the mean height of right ear lobule of female students is more than left but the difference is insignificant while as mean width of right ear lobule is less than left ear lobule and also difference is insignificant. The ear lobule index is more on left side but insignificant.

Table 4: Comparison Of The Measurements According To Gender.

Dimensions	Right male	Right female	P value	Left male	Left female	P value
Lobule height	1.62 +/_ 0.361709	1.828 +/_ 0.29229	<0.05	1.62 +/_ 0.331662	1.78 +/_ 0.291548	>0.05
Lobule width	1.988 +/_ 0.181016	1.88 +/_ 0.331662	>0.05	1.824 +/_ 0.280297	1.96+/_ 0.351188	>0.05

Lobule index	127.824 +/_ 27.81509	104.716 +/_ 21.42109	<0.005	115.856 +/_ 23.00687	112.32 +/_ 23.33374	>0.05

The table 4 shows that the mean right ear lobule height of female students is greater than the right ear lobule height of male students and the difference is significant. The mean width of right ear lobule of male students is more than mean width of right ear lobule of female students but the difference is insignificant. The mean right ear lobule index of male students is more than females and is highly significant. The mean of left ear lobule height and width of female students is more than corresponding parameters of male students but insignificant. Left Ear lobule index is more in male students than female students but insignificant.

DISCUSSION :

In this study there was almost bilateral symmetry of ear lobules in all students. The result was matching the study conducted by L Arora and Singh 5 . The lobule width of right ear among male students and consequently the ear index was more than left ear and the difference was highly significant. This result is in contrast to the study conducted by Ruku Pandit et al 6 in which left ear lobule width and index is more than right in male students. In females there was no significant differences between right and left ear lobules. The lobule height of right ear of females was greater than in males and the difference was significant. This result is in contrast to the study conducted by Ferrario et al 7 , in which lobule indices were more in males than in females. The right ear lobule index was also more in male students than in female students and was highly significant. There was almost no difference in left ear lobule indices between male and female students.

Conclusion :This study provides the mean values of different ear lobule indices of right and left sides in the medical students of jammu and Kashmir. The study may have value in determining ear anomalies and variations and help plastic surgeons in reconstructive surgeries post trauma, congenital malformations etc.

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