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Anatomy

ANATOMICAL VARIATIONS OF ACETABULUM OF DRIED HUMAN HIP BONES IN THE WEST REGION OF UTTAR PRADESH IN INDIAN POPULATION.

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KEYWORDS : Vernier Caliper and hip bones

INTRODUCTION: -

The hip-bone could be a massive, on an irregular basis formed bone, constricted at its center and enlarged on top of and below. The ilium, ischium, and pubis form the hip bone. Its lateral surface is marked close to its middle by a deep, capsular hollow, termed because the socket, known as acetabulum, forms a secure socket for the rounded head of the femur. The floor of the cavity is roughened and non-articular and is termed the acetabular fossa. The sides of the cup present a horseshoe-shaped[6].

AIM & OBJECTIVES: -

This is often a unique study because it has been done in dried human hip bones of unknown sex. This knowledge is helpful for anatomists, operation of hip bone fracture, surgical process and diagnosis inborn hip abnormality, anthropologists and consultants within the field of medicine.

MATERIAL & METHODS: -

The material for this study consists of 154 dry human hip bone of Unknown sex. of these bones were totally ossified bones and free from any pathological or birth defect.

These bones were obtained from numerous sources: - TMMC & RC, Moradabad and Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly (Uttar Pradesh).

Data size: within the current study the sample size is 154. Its estimation supported exactness. The exactness consists of significance levels and also the allowable error. during this study less than 0.5 significance level and numerous levels of significance area unit thought-about. Correlation between morphometrical parameters were investigated using z-test, $p<0.0001$ was significant level. Transverse dimension and depth of acetabulum of hip bones were measured. Its obtained for all parameters were analysed statistically to search out vary, z-test, mean and variance (S.D.). every variable was measured two times at totally different completely different sessions by a constant observer and also the average of the two measurements was calculated for every variable of every bone for the measurements of those variables on a scale. This data was obtained during post graduate time.

Take different parameters of acetabulum of human dry hip bones are mentioned below: -

(A) Depth of acetabulum
(B) Transverse Diameter

A. Depth of acetabulum: It is determined as the maximum vertical distance from the center of the acetabulum to the deepest point in the acetabular cavity. It was evaluated helping a Vernier caliper. First of all, a pointed narrow metallic strip was placed across the center of the acetabular cavity and then the distance from the metallic strip to the deepest point in the acetabulum was evaluated. (fig. 1).
B. Transverse diameter of acetabulum: Transverse diameter of the acetabulum was measured helping a Vernier caliper. Both pointed end of Vernier calipers was placed in a transverse plane after that was obtained the maximum transverse diameter of acetabulum of hip bones (fig. 2).

DISCUSSION: -

Within the current study effort has been created to search out the dried human hip bone with the obtainable knowledge in relevancy the assorted parameters. Total of concerning 154 hip bones are studied. The parameters are chosen from the literature obtainable within the well-known Anatomy textbooks and printed articles. In these articles the study was on identification of validity of the parameters within the hip bone of identified sex. within the following section the results of this study in comparison therewith of previous ones show the subsequent results (table no.1). The mean (Funda Tastekin Aksu,2006) depth of acetabulum of the dried hip bone was 29.49 mm. within the current study it's 27.14mm and is low in comparison with the previous study. Whereas the target this study lies within the very determined within the previous study (refer Table No. 1). The mean (Funda Tastekin Aksu, 2006) dimension of acetabulum of the dried hip bone was 54.29mm. within the current study it's 47.57mm and is low in comparison with the previous study. Whereas the target this study lies within the very determined within the previous study (refer Table No. 1). the full of the study relates with all the relevant past studies except Funda tuskien aksu whose study is bigger than the determined within the current study. The Acetabular depth is less than 9 mm so it may be considered as acetabular dysplasia [4]. Positive and vital correlation was found between the depth and diameter of the acetabulum ($r=0.48$). Explanation of anatomical parameters of hip bone and unknown sex connected variations inside varied ethnic parameters area unit given in Table 1. statistically package specifically SPPS 21.0 was used for analysis of data and was obtained with help Microsoft word, surpass was used to generate graphs, tables, etc. Hip bone parameters unknown sex one- sample Z-test, correlation variance.

RESULT: -

The mean ±S. D worth of depth and transverse dimension of the acetabulum were 27.14 ± 3.50 mm, 47.57 ± 3.99 mm. The maximum and minimum measurements of acetabulum depth were 38.0 mm; 13.0 metric linear unit and most and minimum measurements of acetabulum dimension was 56.0 mm, 39.0 mm metric linear unit severally.

CONCLUSION: -

This work is to contribute to the scientific literature, providing anatomical knowledge on the similarities and variations. 1. The depth

of acetabulum correlates with transverse diameter of acetabulum therefore this data could also be useful throughout hip surgical process, treatment of joint fracture and in diagnosis inborn hip abnormal condition.

The difference seen between the values of present study and that of other workers could be explained on the basis of ethnic and racial variations.

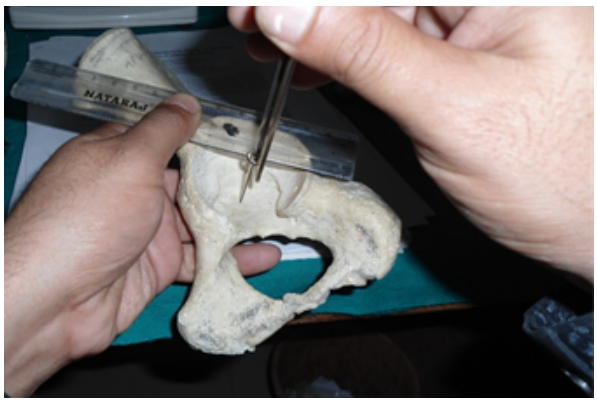
However, it should be kept in mind that the present study had a smaller number of hip bones, so it is worthwhile to perform a similar study on a greater number of hips bones for its theoretical and practical importance in the coming years.

Comparison of current study with different studies for acetabulum dimension acetabulum current study Table - 1

Parameters		Current study (mm)	Funda Tastekin Aksu[2] (mm)	Jeremic dejan et al[5] (mm)	Croft et al[1] mm	Lau et al[3] mm
Acetabulum	Depth	27.14 ± 3.50	29.49 + 4.2	11.8mm	14.4mm	11.8mm
	Dimensions	47.57 ± 3.99	54.29 ± 3.8	Not available	Not available	Not available

Transverse diameter of Acetabulum (Fig-1)

Depth of Acetabulum (Fig-2)



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