Conference Abstract

DAY 1 15th September 2023 (Friday)	ORAL 1	2.00-3.30 pm	Scientific Session 1

A Cross Sectional Study of Abdominal Aortic Bifurcation and its Geometric Anatomy

Dr. Isha Jaiswal, Dr. Vasudha Kulkarni

Department of Anatomy, Akash Institute of Medical Sciences & Research Centre, Devanahalli, Bangalore

Email: jaiswalisha89@gmail.com

Background: Aorto-iliac occlusive disease is predicted to affect 3.56 – 14% of thegeneral population, 14 – 20% of people over 70 years & about 23% of people over80 years. An important factor for developing atherogenesis could be the geometry ofarteries at the arterial bifurcation which influences the blood flow fields. Eachindividual's unique arterial geometry might influence the risk of developing arterialdiseases. Anatomy of aorto-iliac bifurcation is extremely important for variousprocedures like interbody fusion surgery (for spinal problems like segmentallordosis & spondylolisthesis).

Aim: The current study aims to study the abdominal aortic bifurcation & its geometric anatomy in South Indian population.

Methods: A cross sectional study was performed on convenient samples of 10dissected cadaveric specimens & 20 CT angiograms. Digital vernier calipers & goniometer were used for measuring the aorto-iliac bifurcation angle, take offangles, angle of aortic planarity & laterality, length & diameter of abdominal aorta & common iliac arteries. Soft copies of CT angiograms of abdominal aorta wereanalyzed for aorto-iliac diameters & angle of laterality.

Results: Statistical analysis was performed using the SPSS (Version 20).Frequency, percentage, mean & standard deviation were calculated for the relevantparameters. Association between the different parameters of geometric anatomy ofabdominal aortic bifurcation was analyzed by ANOVA. Chi-square test was appliedfor variables like diameter & take off angles. P – values of <0.01 were consideredstatistically significant.

Conclusion: The knowledge of abdominal aorta & its bifurcation is extremelyimportant for surgeons & orthopaedicians to avoid intraoperative injury of thearteries. It has got immense importance in invasive procedures like laparoscopiclumbosacral total disc arthroplasty. The angular asymmetry has significant effectson flow fields near bifurcation affecting wall shear stress, thus also helpful forresearchers performing haemodynamic studies of abdominal aorta.

Keywords: Aorto-iliac bifurcation, geometric anatomy, atherosclerosis