

TOPOGRAPHICAL VARIATION OF PARATHYROID GLANDS IN SRI LANKANS: A POSTMORTEM STUDY

R. Niranjan^{1*}, S. Uthayakumar¹ and S.G. Yasawardene²

¹*Department of Anatomy, Faculty of Medicine, University of Jaffna, Sri Lanka*

²*Department of Anatomy, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka*

**rominiranjan@yahoo.com*

Knowledge of variations in location of parathyroid glands (PGs) is helpful for safe thyroid and parathyroid surgery. Parathyroid glands mostly lie on posterior surface of thyroid gland surrounded by fat globules. Typically PGs are four in number. Studies on anatomical variation of PGs in Asian and American population are documented. We aimed to detect the number and location of PGs in relation to an imaginary division of each thyroid lobe into three equal portions and also to locate PGs in relation to an anatomical bony landmark *i.e.* midpoint of first tracheal ring (MT1).

A total of 65 normal fresh post-mortem thyroid glands along with part of the trachea were collected from the Judicial Medical Office, Colombo South Teaching Hospital. Total length of each thyroid lobe was measured and divided into 3 equal parts as upper 1/3rd, middle 1/3rd and lower 1/3rd by two imaginary lines. PGs were identified on the posterior surface of thyroid by its light tan color and usual site and confirmed subsequently by histology. The distance between PGs and superior pole of thyroid was measured on both sides by using a Vernier caliper.

A total of 78% (202/260) of PGs were identified. The number of PGs varied from one to six in an individual with 2% (1/65) having 6 PGs, 5% (3/65) having 5 PGs, 32% (21/65) having 4 PGs, 28% (18/65) having 3 PGs, 32% (21/65) having 2 PGs, 2% (1/65) having 1 PG. Forty eight percent (97/202) of PGs were located either in the upper 1/3rd or middle 1/3rd. They were considered as superior PGs. The middle 1/3rd lodged 45% (90/202) of PGs. A total of 34% (68/202) of PGs were located at the level of the first tracheal ring. Forty eight percent (97/202) of PGs were located either in the lower 1/3rd or within 1 cm below the lower pole. They were considered as inferior PGs. Thirty two percent (65/202) of the inferior PGs were situated at the lower 1/3rd of the thyroid. A total of 4% (8/202) of PGs located at junction of middle and lower 1/3rd could be considered as either superior or inferior.

During examination we noticed that most of the superior parathyroids were located in the posterior surface and few of them were in the anterior surface of the thyroid glands. Inferior parathyroids were located mostly posterolateral, posterior and few were in the anterior surface of thyroid gland. Even though they were located in the different surfaces of thyroid, most of superior parathyroids were located in the upper 1/3rd or middle 1/3rd portions of thyroid lobe and inferior were at the lower 1/3rd or just below the lower pole of the thyroid gland.