

Location of Superior and Inferior Parathyroid Glands in Relation to the Midpoint of Isthmus of Thyroid and Tracheal Rings

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ABSTRACT

Knowledge of the anatomical location of parathyroids is essential for thyroid surgeries. The thyroid lobes connected by isthmus in front of 2nd, 3rd and 4th tracheal rings (TRs). The aim of the study is to determine the level of location of parathyroids in relation to midpoint of isthmus (MOI). Sixty fresh adult thyroids along with trachea were collected from Judicial Medical Officer, Colombo South Teaching Hospital, Sri Lanka. Level of superior and inferior borders of isthmus (SBI & IBI) to underlying cricoid and TRs was noted. MOI was marked with a pin and TR corresponding to it was noted. SBI extended to 1st TR in 76.66% (46/60) and to 2nd TR in 18.33% (11/60) of thyroids. IBI extended to 3rd TR in 50% (30/60) and to 2nd TR in 38.33% (23/60) of thyroids. Common site for SBI was at 1st TR and for IBI at 3rd TR. Common site for MOI was at 2nd TR. A total of 82.08% (197/240) of parathyroids were identified and the level of location of parathyroids to underlying cartilages was noted. Out of them, 0.5% (1/197) were located just above cricoid, 19.28% (38/197) at cricoid, 27.91% (55/197) at 1st TR, 5.07% (10/197) at 2nd TR, 28.42% (56/197) at 3rd TR,

12.18% (24/197) at 4th TR, 5.58% (11/197) at 5th TR and 1.01% (2/197) were at 6th TR level. Parathyroids located above and below the common MOI were considered as superior and inferior parathyroids. A total of 5.07% (10/197) of parathyroids were located at 2nd TR could be considered as either superior or inferior. Extension of isthmus is variable. Majority of identified superior parathyroids were located above and inferior parathyroids were below the MOI. Thus MOI helps in identification and differentiation of parathyroids.

Key words: Parathyroid location, Tracheal rings. Thyroid isthmus