# ABSTRACT

## Review Morphometry Cervical Vertebrae 3 - 7 based on Multislice Computed Tomography Scan

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**Obyektive:** To know morphometry description vertebra cervical 3 - 7

**Method:** This study is observational description study to know morphometry description vertebra cervical 3 - 7 at patient with MSCT examination in Mitra Keluarga Hospital Surabaya January-December 2012, age 18-60 years old without past traumatic or vertebra cervical anomaly.

**Results:** Total population in this study 14 with male 8 and female 6. The largest mean pedicle diameter was found at C3 in both male (4,92mm at the right and left side) and female populations (4,92 mm at the right side and 4,9 mm at the left side) and smallest at C4 and C5 in both male and female populations. The smallest mean pedicle-corpus length was found at C3 in both male (18,48 mm at the right side and 18,49 mm at the left side) and female populations (18,42 mm at right side and 18,37 at left side) and increase until C7 in both male (25,54 mm at the right side and 25,55 mm at the left side) and female populations (25,39 mm at the right side and 25,35 at the left side). The smallest mean chord length was found at C3 in both male (31,80 mm) and female populations (31,76 mm) and increase until C7 in both male (38,75 mm) and female (38,55 mm). The greatest mean pedicle length was found at C5 in both male and female;

the smallest was found at C7 in both and female (13,16mm). The transversal pedicle angulation was found widening in male from C5 to C7 and the greatest at C7 (38,39’ at the right side and 38,27 ‘ at the left side) and smallest at C3 ( 37,73’ at right and left side) , in female; the greatest was found at C5 (38,23’ at the right side and 38,22’ at the left side) and smallest at C4 (37,58’ at the right side and 37,62’ at the left side) (13,57 mm). The maximum depth needed to avoid vertebralis arteri (VA) violation in both male and female was not more than 13,23 mm. With Magerl’s technique, trajectories was longest at C5 in both male (13,51 mm at the right side and 13,49 at the left side) and female (13,31 mm at the right side and 13,32 at the left side); and smallest was found at C7 in both male (10,27 mm at the right and left side) and female (10,19 mm at the right side and 10,17 mm at the left side). The greatest mean screw trajectory angel on the sagital plane was found at C3 in both male (22,59’ at the right and left side) and female (22,51’ at the right side and 22,50’ at the left side); the smallest was found at C7 in both male (19,42’ at the right side and 19,41’ at the left side) and female (19,39’ at the right and left side)

**Conclusion:** Cervical morphometry useful in instrumentation procedur transpedicle and lateral mass screw. In instrumentation application, lenght and diameter cervical screw every level must be differentiated, adapted with lenght and diameter measurement every level, there were not different between male and female size, right and left size is the same level.

**Key words:** Morphometry, cervical vertebrae, pedicle screw, lateral mass screw