Surgical Anatomy of the Cervical Pedicle

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STUDY DESIGN: The posterior entrance to the cervical pedicle was described using quantitative and descriptive parameters. Objectives: To establish guidelines for gaining entrance to the cervical pedicle. Summary of Background Data: Reliable pedicle entrance landmarks have not been established.

METHODS: Fifty-three spines (C2-C7) were evaluated using a digital caliper and by visual inspection using four osseous landmarks: the lateral vertebral notch and inferior articular process (C2-C7), the medial pedicle cortex at C2, and the transverse process at C7. (Figure 1)

RESULTS: Three distances and three relationships were defined. (Figure 2) Distances: 1. At C2, the average medial pedicle cortex/pedicle distance was 7.2mm. 2. The lateral vertebral notch-pedicle distances showed that the entrances were located close to the notch at C2, almost at the notch at C3 and C4, and gradually moved medially away from the notch from C5 to C7. The pedicles were rarely located lateral to the lateral vertebral notch. 3. The inferior articular process-pedicle distance was large at C2, the shortest at C3, and gradually increased towards C7. Relationships: 1. The pedicles were located mostly in the intermediate third of the inferior facet at C2, in the lateral third at C3, C4, and C7, or in the lateral or intermediate thirds at C5 and C6. Only C2 and C6 pedicles were located in its medial third. (Figure 3) 2. The pedicles were located mostly below the lateral vertebral notch at C2, at it at C3-C6, while almost equally above and at the notch at C7. The majority of the C7 pedicles were located below the midline of the transverse process. CONCLUSIONS: The location of the pedicle entrance was unique at each cervical level. Their distribution followed the cervical spine cord enlargement. Our study expands knowledge of the cervical pedicle anatomy.
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