measure dose produced during simulated posterior bitewing examinations (n = 4). Optically stimulated luminescent dosimeters were used to measure x-ray dose at 24 head and neck tissue/organ sites of interest. Dosimetry was acquired by using a tissue equivalent phantom simulating the anatomy of an average adult male (AtomMax Model 711 HN,CIRS Inc., Norfolk, VA). Exposure parameters used were 70 kV/7 mA (0.7 mAs) and 0.12 mAs for s-IOT and conventional (KaVo FOCUS, Charlotte, NC), respectively. Analysis of variance (ANOVA) and Tukey's HSD ("honest significant difference") statistics on dose were utilized to demonstrate significant data relationships.

**Results:**

Effective dose by modality ($\mu$Sv)

| Modality | Dose ($\mu$Sv) |
|---|---|
| Rectangular Conventional with Sensor | 1.1 |
| Rectangular Conventional without sensor | 4.6 |
| s-IOT with sensor | 5.9 |
| s-IOT without sensor | 11.9 |
| Circular Conventional with sensor | 8.2 |
| Circular Conventional without sensor | 15.7 |

Sensor-present doses were significantly lower than sensor-absent for all modalities ($P$ = .0001). Significant differences in E were found for all modality combinations with the exception of s-IOT sensor-present modalities vs conventional rectangular sensor-absent modalities ($P$ = .0482).

**Discussion:** Unadjusted s-IOT dose was 26% less than conventional-circular exposures and 61% greater than conventional-rectangular for sensor-absent exposures. Unadjusted sensor-present s-IOT dose was 28% less than conventional-circular exposures and 81% greater than conventional-rectangular exposures. Despite a 4-fold increase in mAs for s-IOT imaging compared with conventional imaging, E from s-IOT imaging was at least 26% less than the current most commonly implemented bitewing technique, conventional-circular, while providing substantially greater diagnostic yield in the form of 3-dimensional (3-D) information.

## JOURNEY OF THE NOTOCHORD: LINKING EMBRYOLOGY TO RADIOLOGIC INTERPRETATION OF THE CRANIOCERVICAL JUNCTION

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**Background:** The notochord is a mesoderm-derived cylindrical midline structure and a defining feature found in all chordates. In vertebrates, the notochordal process represents the initial embryologic axial skeleton and plays important structural and signaling roles in the development of the vertebral column, nervous system, and skull base. Besides persisting postnatally as the nucleus pulposus of the intervertebral disks, the remaining notochord typically regresses during fetal development after completion of its principal tasks. However, remnants of the notochord can persist along its developmental path within the craniocervical region. These remnants present as a spectrum of entities, ranging from anatomic variants, benign tumors, and malignant neoplasms of notochordal origin. Radiologists who interpret imaging in the area along the embryologic path of the notochord should be knowledgeable about its development and be able to recognize its wide array of potential pathologies.

**Discussion:** This presentation will review notochord embryology and the anatomic and pathologic relevance of notochordal remnants and demonstrate the vast range of imaging features and behavioral properties of these postnatal remnants in the area of the posterior cranial base and cervical spine. We present 3 cases of inferior median clival canal, a notochordal anatomic variant typically discovered as an incidental finding. Also known as *canalis basilaris medianus*, this notochord remnant manifests as a narrow, well-defined corticated canal passing through the sagittal plane of the clivus. Depending on its course and extent, 2 groups with 6 subtypes have been described. We also present imaging features of pathologic abnormalities, including Tornwaldt cyst, benign remnant ecchordosis physaliphora, and chordoma, a notochord malignancy. Awareness of the full spectrum of pathologic consequences of persistent notochord tissue, recognition of their imaging features, and directing appropriate referral add to the value provided by an oral and maxillofacial radiologist.

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## OSTEOBLASTOMA VS OSTEOID OSTEOMA: 2 CASE REPORTS

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**Clinical Presentation:** Case 1: A 17-year-old male presented 3 months −after third molar extraction with progressively worsening pain in the lower left extraction site. Clinical examination was unremarkable. Computed tomography (CT) showed a 12 × 10 × 11 mm, well-demarcated, circular, nonexpansile, mixed-density lesion with a sclerotic border and surrounded by a radiolucent rim. Lingual cortical bone defect was noted.

Case 2: A 37-year-old male presented with progressively worsening pain in the left posterior mandible and preauricular area. CT showed a 16 × 21 mm well-defined, expansile, mixed-density lesion with a soft tissue capsule, which was surrounded by a sclerotic band. Unusual features included buccal/lingual expansion, new bone apposition, and soft tissue edema in the masseter muscle. Clinically, the site was significant for swelling.

**Differential Diagnosis:** Given the radiographic findings and the presence of pain, osteoblastoma and osteoid osteoma