



## Grounding Caption

This localization caption provides multi-dimensional spatial analysis of anatomical structures and pathological findings for this panoramic dental X-ray image, including:

Teeth visibility with center points (total: 32):

```
[
{'point_2d': [535, 652], 'tooth_id': '47', 'score': 0.95},
{'point_2d': [701, 688], 'tooth_id': '45', 'score': 0.94},
{'point_2d': [623, 668], 'tooth_id': '46', 'score': 0.94},
{'point_2d': [1127, 684], 'tooth_id': '36', 'score': 0.93},
{'point_2d': [458, 604], 'tooth_id': '48', 'score': 0.92},
{'point_2d': [598, 453], 'tooth_id': '16', 'score': 0.92},
{'point_2d': [521, 448], 'tooth_id': '17', 'score': 0.92},
{'point_2d': [1004, 695], 'tooth_id': '34', 'score': 0.91},
{'point_2d': [1216, 665], 'tooth_id': '37', 'score': 0.91},
{'point_2d': [796, 695], 'tooth_id': '43', 'score': 0.9},
{'point_2d': [461, 438], 'tooth_id': '18', 'score': 0.9},
{'point_2d': [1045, 700], 'tooth_id': '35', 'score': 0.9},
{'point_2d': [663, 475], 'tooth_id': '15', 'score': 0.9},
{'point_2d': [992, 481], 'tooth_id': '23', 'score': 0.9},
{'point_2d': [1294, 623], 'tooth_id': '38', 'score': 0.9},
{'point_2d': [762, 473], 'tooth_id': '13', 'score': 0.9},
{'point_2d': [713, 476], 'tooth_id': '14', 'score': 0.89},
{'point_2d': [948, 497], 'tooth_id': '22', 'score': 0.89},
{'point_2d': [1227, 469], 'tooth_id': '27', 'score': 0.89},
{'point_2d': [749, 690], 'tooth_id': '44', 'score': 0.89},
{'point_2d': [962, 696], 'tooth_id': '33', 'score': 0.88},
{'point_2d': [1082, 494], 'tooth_id': '25', 'score': 0.88},
{'point_2d': [1033, 485], 'tooth_id': '24', 'score': 0.87},
{'point_2d': [901, 498], 'tooth_id': '21', 'score': 0.87},
{'point_2d': [807, 496], 'tooth_id': '12', 'score': 0.87},
{'point_2d': [1149, 482], 'tooth_id': '26', 'score': 0.86},
{'point_2d': [891, 684], 'tooth_id': '31', 'score': 0.86},
{'point_2d': [925, 689], 'tooth_id': '32', 'score': 0.83},
{'point_2d': [852, 497], 'tooth_id': '11', 'score': 0.81},
{'point_2d': [835, 687], 'tooth_id': '42', 'score': 0.79},
{'point_2d': [861, 686], 'tooth_id': '41', 'score': 0.78},
{'point_2d': [1284, 449], 'tooth_id': '28', 'score': 0.73}
]
```

Wisdom teeth detection (total: 4):

```
[
{'box_2d': [409, 538, 507, 671], 'tooth_id': '48', 'is_impacted': false, 'score': 0.92},
{'box_2d': [424, 367, 499, 509], 'tooth_id': '18', 'is_impacted': false, 'score': 0.9},
{'box_2d': [1240, 551, 1348, 695], 'tooth_id': '38', 'is_impacted': false, 'score': 0.9},
{'box_2d': [1246, 373, 1321, 525], 'tooth_id': '28', 'is_impacted': false, 'score': 0.73}
]
```

Dental Pathological Findings (total: 2):

```
[
{'box_2d': [565, 601, 585, 631], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.34, 'near_tooth': '47'},
{'box_2d': [1211, 603, 1238, 630], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.31, 'near_tooth': '37'}
]
```

Historical Treatments (total: 0):

```
[
```

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## Medical Report

### Oral Panoramic Radiographic Report

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#### **\*\*Teeth-Specific Observations\*\***

##### **1. General Condition**

- **32 teeth** are visualized, including all four third molars (#48, #18, #38, #28).
- All detected wisdom teeth are **present and non-impacted**, with normal eruptive positioning.
- No evidence of systemic pathology or radiographic anomalies in the mandibular or maxillary bone.

##### **2. Pathological Findings**

- **Suspicious areas suggestive of early caries** noted in proximity to:
  - **#47** (left maxillary first molar).
  - **#37** (right mandibular first molar).
- No radiographic signs of periodontal disease, periapical pathology, or retained roots.

##### **3. Historical Interventions**

- **No prior dental treatments** (restorations, root canals, crowns, or implants) observed.
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#### **\*\*Clinical Summary & Recommendations\*\***

##### **1. Priority Concerns**

- **Early caries concerns** near #47 and #37 require clinical correlation via visual examination and possibly supplemental imaging (e.g., bitewing radiographs).
- No urgent impactions or fractures detected; however, wisdom teeth (#28, #38) demonstrate lower confidence scores in localization, warranting closer clinical assessment.

##### **2. Preventive Measures**

- Reinforce oral hygiene protocols, emphasizing interproximal cleaning (flossing, water flossing) for #47 and #37.
- Monitor for progression of suspicious carious lesions during routine follow-ups.

##### **3. Follow-up Protocol**

- **Schedule a 3-month recall** to reassess radiographic changes in #47 and #37.
  - **Referral to general dentist** for definitive evaluation of caries, including possible restorative intervention.
  - Continue 6-month recall program for routine panoramic review and periodontal screening.
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\*Report generated by AI assistant; final interpretation by a licensed dentist is required.\*