| Ground Truth | Ensemble Prediction |

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: 29):

[
{'point_2d': [1110, 740], 'tooth_id': '36', 'score': 0.95},
{'point_2d': [516, 528], 'tooth_id': '17', 'score': 0.94},
{'point_2d': [1283, 688], 'tooth_id': '38', 'score': 0.94},
{'point_2d': [689, 745], 'tooth_id': '45', 'score': 0.93},
{'point_2d': [1200, 725], 'tooth_id': '37', 'score': 0.93},
{'point_2d': [662, 514], 'tooth_id': '15', 'score': 0.93},
{'point_2d': [1204, 512], 'tooth_id': '27', 'score': 0.93},
{'point_2d': [609, 734], 'tooth_id': '46', 'score': 0.93},
{'point_2d': [880, 525], 'tooth_id': '21', 'score': 0.92},
{'point_2d': [438, 522], 'tooth_id': '18', 'score': 0.91},
{'point_2d': [802, 745], 'tooth_id': '42', 'score': 0.91},
{'point_2d': [592, 522], 'tooth_id': '16', 'score': 0.9},
{'point_2d': [1047, 505], 'tooth_id': '25', 'score': 0.9},
{'point_2d': [446, 686], 'tooth_id': '48', 'score': 0.9},
{'point_2d': [1031, 757], 'tooth_id': '35', 'score': 0.89},
{'point_2d': [756, 766], 'tooth_id': '43', 'score': 0.89},
{'point_2d': [1292, 502], 'tooth_id': '28', 'score': 0.89},
{'point_2d': [760, 528], 'tooth_id': '13', 'score': 0.88},
{'point_2d': [955, 511], 'tooth_id': '23', 'score': 0.88},
{'point_2d': [1120, 515], 'tooth_id': '26', 'score': 0.87},
{'point_2d': [715, 522], 'tooth_id': '14', 'score': 0.87},
{'point_2d': [990, 760], 'tooth_id': '34', 'score': 0.87},
{'point_2d': [945, 768], 'tooth_id': '33', 'score': 0.85},
{'point_2d': [867, 750], 'tooth_id': '31', 'score': 0.84},
{'point_2d': [727, 750], 'tooth_id': '44', 'score': 0.84},
{'point_2d': [834, 733], 'tooth_id': '41', 'score': 0.83},
{'point_2d': [820, 529], 'tooth_id': '11', 'score': 0.82},
{'point_2d': [896, 745], 'tooth_id': '32', 'score': 0.8},
{'point_2d': [1000, 521], 'tooth_id': '24', 'score': 0.78}
]

Wisdom teeth detection (total: 4):

[
{'box_2d': [1225, 612, 1341, 765], 'tooth_id': '38', 'is_impacted': false, 'score': 0.94},
{'box_2d': [400, 462, 477, 581], 'tooth_id': '18', 'is_impacted': false, 'score': 0.91},
{'box_2d': [388, 612, 505, 759], 'tooth_id': '48', 'is_impacted': false, 'score': 0.9},
{'box_2d': [1249, 427, 1334, 576], 'tooth_id': '28', 'is_impacted': false, 'score': 0.89}
]

Dental Pathological Findings (total: 5):

[
{'box_2d': [1187, 402, 1276, 584], 'tooth_id': '27', 'label': 'periapical radiolucency', 'score': 0.27},
{'box_2d': [1075, 476, 1163, 630], 'tooth_id': '26', 'label': 'caries', 'score': 0.24},
{'box_2d': [1267, 627, 1303, 658], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.51, 'near_tooth': '38'},
{'box_2d': [1167, 657, 1198, 680], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.3, 'near_tooth': '37'},
{'box_2d': [592, 766, 633, 817], 'tooth_id': 'unknown', 'label': 'periapical radiolucency', 'score': 0.3, 'near_tooth': '46'}
]

Historical Treatments (total: 1):

[
{'box_2d': [482, 655, 570, 788], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.93, 'near_tooth': '46'}
]

Medical Report

Oral Panoramic X-ray Examination Report

Teeth-Specific Observations

1. General Condition

A total of 29 teeth were visualized using the FDI numbering system. All four wisdom teeth (#18, #28, #38, #48) were present and erupted without evidence of impaction.

2. Pathological Findings

- **Tooth #27**: Areas of concern noted for **periapical radiolucency** at the apical region.

- **Tooth #26**: Suspicious for **caries** on the mesiobuccal surface.

- **Near tooth #38**: Areas of concern noted for **caries** on the distal surface.

- **Near tooth #37**: Suspicious for **caries** on the mesial surface.

- **Near tooth #46**: Areas of concern noted for **periapical radiolucency** adjacent to the apical region.

3. Historical Interventions

- **Near tooth #46**: Presence of a **root canal-treated** tooth with radiolucent changes in the apical region.

Clinical Summary & Recommendations

Priority Concerns

- Suspicious **caries** near tooth #38 and #37 require clinical correlation and possible restorative intervention.

- **Periapical radiolucency** near tooth #46 (associated with a root canal-treated tooth) warrants further evaluation for apical pathology.

- **Tooth #27** and **#26** demonstrate areas of concern requiring close monitoring for progressive caries or endodontic involvement.

Preventive Measures

- Reinforce oral hygiene measures, particularly around teeth #37, #38, and #46.

- Monitor suspicious caries near #37, #38, and #26 for progression.

Follow-up Protocol

- **6-month recall** for radiographic and clinical reassessment of suspicious lesions.

- Referral to an **endodontist** for evaluation of apical radiolucency near #46 and suspected caries on #26.

- Consider **restorative intervention** for caries near #37 and #38 after definitive diagnosis.

Generated using FDI tooth numbering system. All findings are based on radiographic interpretation.