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: 28):
[
{'point_2d': [617, 640], 'tooth_id': '46', 'score': 0.95},
{'point_2d': [1212, 634], 'tooth_id': '37', 'score': 0.94},
{'point_2d': [437, 533], 'tooth_id': '48', 'score': 0.94},
{'point_2d': [691, 668], 'tooth_id': '45', 'score': 0.94},
{'point_2d': [511, 597], 'tooth_id': '47', 'score': 0.94},
{'point_2d': [959, 523], 'tooth_id': '22', 'score': 0.9},
{'point_2d': [1056, 689], 'tooth_id': '35', 'score': 0.9},
{'point_2d': [1039, 513], 'tooth_id': '24', 'score': 0.9},
{'point_2d': [455, 378], 'tooth_id': '18', 'score': 0.9},
{'point_2d': [1122, 667], 'tooth_id': '36', 'score': 0.89},
{'point_2d': [899, 526], 'tooth_id': '21', 'score': 0.89},
{'point_2d': [523, 408], 'tooth_id': '17', 'score': 0.88},
{'point_2d': [1146, 486], 'tooth_id': '26', 'score': 0.88},
{'point_2d': [953, 708], 'tooth_id': '33', 'score': 0.88},
{'point_2d': [748, 688], 'tooth_id': '44', 'score': 0.87},
{'point_2d': [718, 481], 'tooth_id': '14', 'score': 0.87},
{'point_2d': [1267, 430], 'tooth_id': '28', 'score': 0.87},
{'point_2d': [1206, 454], 'tooth_id': '27', 'score': 0.83},
{'point_2d': [1001, 701], 'tooth_id': '34', 'score': 0.83},
{'point_2d': [916, 712], 'tooth_id': '32', 'score': 0.83},
{'point_2d': [1081, 504], 'tooth_id': '25', 'score': 0.82},
{'point_2d': [766, 488], 'tooth_id': '13', 'score': 0.81},
{'point_2d': [884, 702], 'tooth_id': '31', 'score': 0.81},
{'point_2d': [848, 519], 'tooth_id': '11', 'score': 0.8},
{'point_2d': [806, 703], 'tooth_id': '43', 'score': 0.8},
{'point_2d': [995, 518], 'tooth_id': '23', 'score': 0.8},
{'point_2d': [815, 511], 'tooth_id': '12', 'score': 0.75},
{'point_2d': [859, 698], 'tooth_id': '41', 'score': 0.61}
]

Wisdom teeth detection (total: 3):
[
{'box_2d': [364, 454, 510, 612], 'tooth_id': '48', 'is_impacted': false, 'score': 0.94},
{'box_2d': [400, 317, 511, 439], 'tooth_id': '18', 'is_impacted': false, 'score': 0.9},
{'box_2d': [1225, 343, 1309, 517], 'tooth_id': '28', 'is_impacted': false, 'score': 0.87}
]

Dental Pathological Findings (total: 6):
[
{'box_2d': [761, 412, 841, 601], 'tooth_id': '13', 'label': 'calculus', 'score': 0.43},
{'box_2d': [808, 411, 879, 625], 'tooth_id': '11', 'label': 'calculus', 'score': 0.36},
{'box_2d': [1202, 457, 1232, 503], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.52, 'near_tooth': '27'},
{'box_2d': [421, 473, 472, 522], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.44, 'near_tooth': '48'},
{'box_2d': [492, 406, 516, 455], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.28, 'near_tooth': '17'},
{'box_2d': [1065, 530, 1103, 566], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.27, 'near_tooth': '25'}
]

Historical Treatments (total: 4):
[
{'box_2d': [1067, 578, 1149, 656], 'tooth_id': '36', 'label': 'crown', 'score': 0.91},

{'box_2d': [634, 378, 693, 552], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.87, 'near_tooth': '14'},
{'box_2d': [1153, 558, 1206, 599], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.74, 'near_tooth': '37'},
{'box_2d': [518, 516, 583, 562], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.52, 'near_tooth': '47'}
]

Medical Report

Teeth-Specific Observations

1. **General Condition**

- A total of 28 teeth are visualized, including all permanent teeth.

- Wisdom teeth (#48, #18, #28) are present and non-impacted. No signs of impaction or pathologic displacement observed.

2. **Pathological Findings**

- **#13**: Suspected calculus deposition noted on the root surface.

- **#11**: Areas of concern for calculus accumulation on the occlusal aspect.

- **Near #27**: Suspicious for early carious lesion on the mesial surface.

- **Near #48**: Suggestive of a small carious radiolucency near the distal cervical region.

- **Near #17**: Areas of concern for potential caries on the proximal contact.

- **Near #25**: Suggestive of a carious-like radiolucency near the mid-root area.

3. **Historical Interventions**

- **#36**: Presence of a full-coverage crown.

- **Near #14**: Evidence of root canal treatment.

- **Near #37**: Restorative material on the distal surface.

- **Near #47**: Residual restoration on the mesial aspect.

Clinical Summary & Recommendations

1. **Priority Concerns**

- **#13 and #11**: Suspected calculus deposits require professional scaling and improved interdental hygiene.

- **Proximal caries near #27 and #48**: Monitor for progression; consider radiographic correlation.

- **#37 and #47**: Evaluate restoration integrity for secondary caries or marginal breakdown.

2. **Preventive Measures**

- Reinforce interdental cleaning techniques (flossing, interproximal brushes) to address calculus-prone areas (#13, #11).

- Counsel on dietary modifications to reduce caries risk in suspicious regions (near #27, #48, #17, #25).

- Schedule regular radiographic follow-ups to assess suspicious carious lesions.

3. **Follow-up Protocol**

- **6-month recall** for periodontal evaluation and re-evaluation of questionable caries.

- **Referral to endodontist** for #14 if asymptomatic but root canal-treated status shows radiographic compromise.

- **Dental caries risk assessment** for prioritized teeth (near #27, #48) with targeted remineralization therapy.

Generated based on structured localization data. All findings are interpreted with clinical relevance to the provided visual and spatial information.