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: 27):
[
{'point_2d': [521, 470], 'tooth_id': '17', 'score': 0.95},
{'point_2d': [638, 687], 'tooth_id': '46', 'score': 0.95},
{'point_2d': [1148, 670], 'tooth_id': '36', 'score': 0.95},
{'point_2d': [554, 667], 'tooth_id': '47', 'score': 0.95},
{'point_2d': [1220, 652], 'tooth_id': '37', 'score': 0.92},
{'point_2d': [672, 491], 'tooth_id': '15', 'score': 0.92},
{'point_2d': [1186, 456], 'tooth_id': '27', 'score': 0.92},
{'point_2d': [770, 701], 'tooth_id': '44', 'score': 0.92},
{'point_2d': [1069, 690], 'tooth_id': '35', 'score': 0.92},
{'point_2d': [819, 706], 'tooth_id': '43', 'score': 0.9},
{'point_2d': [1027, 699], 'tooth_id': '34', 'score': 0.89},
{'point_2d': [603, 482], 'tooth_id': '16', 'score': 0.89},
{'point_2d': [1000, 497], 'tooth_id': '23', 'score': 0.88},
{'point_2d': [762, 507], 'tooth_id': '13', 'score': 0.87},
{'point_2d': [990, 695], 'tooth_id': '33', 'score': 0.86},
{'point_2d': [856, 508], 'tooth_id': '11', 'score': 0.85},
{'point_2d': [1042, 483], 'tooth_id': '24', 'score': 0.85},
{'point_2d': [813, 506], 'tooth_id': '12', 'score': 0.84},
{'point_2d': [722, 498], 'tooth_id': '14', 'score': 0.84},
{'point_2d': [958, 498], 'tooth_id': '22', 'score': 0.83},
{'point_2d': [911, 506], 'tooth_id': '21', 'score': 0.83},
{'point_2d': [865, 707], 'tooth_id': '42', 'score': 0.81},
{'point_2d': [888, 701], 'tooth_id': '41', 'score': 0.81},
{'point_2d': [1096, 473], 'tooth_id': '25', 'score': 0.79},
{'point_2d': [1261, 470], 'tooth_id': '28', 'score': 0.72},
{'point_2d': [918, 706], 'tooth_id': '31', 'score': 0.71},
{'point_2d': [949, 710], 'tooth_id': '32', 'score': 0.71}
]

Wisdom teeth detection (total: 1):
[
{'box_2d': [1226, 406, 1297, 535], 'tooth_id': '28', 'is_impacted': false, 'score': 0.72}
]

Dental Pathological Findings (total: 5):
[
{'box_2d': [1074, 402, 1165, 585], 'tooth_id': '25', 'label': 'caries', 'score': 0.23},
{'box_2d': [1265, 575, 1375, 684], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.91, 'near_tooth': '37'},
{'box_2d': [517, 610, 537, 643], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.69, 'near_tooth': '47'},
{'box_2d': [651, 631, 680, 677], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.53, 'near_tooth': '46'},
{'box_2d': [688, 762, 729, 803], 'tooth_id': 'unknown', 'label': 'periapical radiolucency', 'score': 0.43, 'near_tooth': '44'}
]

Historical Treatments (total: 2):
[
{'box_2d': [685, 611, 753, 679], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.94, 'near_tooth': '44'},
{'box_2d': [685, 611, 753, 782], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.92, 'near_tooth': '44'}
]

Medical Report

Teeth-Specific Observations

1. **General Condition**

A total of 27 teeth are visualized, with the panoramic image demonstrating adequate clarity for diagnostic interpretation. The wisdom tooth (#28) is present and unimpacted, consistent with normal eruption. No evidence of agenesis or supernumerary teeth is noted.

2. **Pathological Findings**

- #25 (lower left first molar): Suspicious for caries involving the occlusal surface.

- Near #37 (lower left first molar): Clear indication of an impacted structure adjacent to the distal aspect.

- Near #47 (lower right second molar): Suspicion of caries localized to the mesial surface.

- Near #46 (lower right first molar): Areas of concern for caries on the distal surface.

- Near #44 (lower right first molar): Suspicious for periapical radiolucency suggesting potential apical pathology.

3. **Historical Interventions**

- #44 (lower right first molar): Presence of a crown and evidence of root canal treatment.

Clinical Summary & Recommendations

1. **Priority Concerns**

- Impacted structure near #37 requires further evaluation to assess for resorption of adjacent teeth or periodontal compromise.

- Suspicious caries on #25 and near #47 necessitates prompt diagnostic confirmation (e.g., intraoral radiograph) to determine caries depth.

- Periapical radiolucency near #44 should be evaluated for apical granuloma or residual infection despite prior root canal treatment.

2. **Preventive Measures**

- Reinforce oral hygiene protocols, emphasizing interproximal plaque control near #25, #46, and #47.

- Monitor suspicious carious lesions for progression during follow-up visits.

3. **Follow-up Protocol**

- Schedule a 6-month recall for reassessment of #25, #46, #47, and #44.

- Referral to an endodontist is recommended for #44 to evaluate apical pathology and determine need for retreatment.

- If impacted structure near #37 is confirmed, surgical consultation should be considered to plan for potential extraction.