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': [1696, 1128], 'tooth_id': '36', 'score': 0.96},
{'point_2d': [938, 853], 'tooth_id': '16', 'score': 0.94},
{'point_2d': [825, 1092], 'tooth_id': '47', 'score': 0.94},
{'point_2d': [818, 852], 'tooth_id': '17', 'score': 0.94},
{'point_2d': [1065, 1141], 'tooth_id': '45', 'score': 0.93},
{'point_2d': [1035, 861], 'tooth_id': '15', 'score': 0.93},
{'point_2d': [1581, 1137], 'tooth_id': '35', 'score': 0.93},
{'point_2d': [953, 1121], 'tooth_id': '46', 'score': 0.93},
{'point_2d': [1828, 1114], 'tooth_id': '37', 'score': 0.91},
{'point_2d': [1525, 879], 'tooth_id': '24', 'score': 0.91},
{'point_2d': [1699, 869], 'tooth_id': '26', 'score': 0.89},
{'point_2d': [1598, 878], 'tooth_id': '25', 'score': 0.88},
{'point_2d': [1151, 1138], 'tooth_id': '44', 'score': 0.88},
{'point_2d': [1143, 863], 'tooth_id': '13', 'score': 0.87},
{'point_2d': [1216, 1152], 'tooth_id': '43', 'score': 0.86},
{'point_2d': [1503, 1149], 'tooth_id': '34', 'score': 0.86},
{'point_2d': [1807, 892], 'tooth_id': '27', 'score': 0.86},
{'point_2d': [1271, 1123], 'tooth_id': '42', 'score': 0.84},
{'point_2d': [1477, 858], 'tooth_id': '23', 'score': 0.81},
{'point_2d': [1435, 1144], 'tooth_id': '33', 'score': 0.79},
{'point_2d': [737, 818], 'tooth_id': '18', 'score': 0.76},
{'point_2d': [1111, 881], 'tooth_id': '14', 'score': 0.74},
{'point_2d': [1385, 1140], 'tooth_id': '32', 'score': 0.72},
{'point_2d': [1310, 1117], 'tooth_id': '41', 'score': 0.71},
{'point_2d': [1873, 848], 'tooth_id': '28', 'score': 0.71},
{'point_2d': [1411, 890], 'tooth_id': '22', 'score': 0.69},
{'point_2d': [1341, 1114], 'tooth_id': '31', 'score': 0.68}
]

Wisdom teeth detection (total: 2):
[
{'box_2d': [663, 732, 812, 904], 'tooth_id': '18', 'is_impacted': false, 'score': 0.76},
{'box_2d': [1806, 759, 1940, 936], 'tooth_id': '28', 'is_impacted': true, 'score': 0.71}
]

Dental Pathological Findings (total: 5):
[
{'box_2d': [1004, 717, 1107, 1014], 'tooth_id': '15', 'label': 'periapical radiolucency', 'score': 0.28},
{'box_2d': [1807, 758, 1939, 936], 'tooth_id': '28', 'label': 'impacted', 'score': 0.6},
{'box_2d': [1863, 987, 2005, 1197], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.95, 'near_tooth': '37'},
{'box_2d': [618, 967, 767, 1193], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.95, 'near_tooth': '47'},
{'box_2d': [884, 896, 946, 980], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.67, 'near_tooth': '16'}
]

Historical Treatments (total: 3):
[
{'box_2d': [1332, 736, 1386, 883], 'tooth_id': 'unknown', 'label': 'implant', 'score': 0.94, 'near_tooth': '22'},
{'box_2d': [1186, 744, 1235, 896], 'tooth_id': 'unknown', 'label': 'implant', 'score': 0.89, 'near_tooth': '13'},
{'box_2d': [1250, 724, 1295, 880], 'tooth_id': 'unknown', 'label': 'implant', 'score': 0.89, 'near_tooth': '13'}

]

Medical Report

Teeth-Specific Observations

1. **General Condition**

A total of 27 teeth are visualized, with all molars and premolars accounted for. Wisdom teeth (#18 and #28) are present; #18 is fully erupted and unimpacted, while #28 exhibits impaction. No evidence of tooth loss is observed.

2. **Pathological Findings**

- #15: Suspicious for periapical radiolucency.

- #28: Suspicious for wisdom tooth impaction.

- Near #37: Clear indication of impacted anatomical structure.

- Near #47: Clear indication of impacted anatomical structure.

- Near #16: Suspicious for carious lesion.

3. **Historical Interventions**

- Near #22: Presence of a dental implant.

- Near #13: Two dental implants identified.

Clinical Summary & Recommendations

Priority Concerns

- Impacted wisdom tooth (#28) requires evaluation for surgical extraction due to potential risk of infection or resorption.

- Suspicious periapical radiolucency on #15 necessitates endodontic assessment to confirm apical pathology.

- Carious lesion near #16 demands diagnostic confirmation and prompt restorative intervention.

- Impacted structures near #47 and #37 warrant further imaging (e.g., CBCT) to clarify anatomical relationships.

Preventive Measures

- Reinforce oral hygiene protocols, emphasizing interproximal cleaning for high-risk areas (#16, #28).

- Monitor suspicious periapical radiolucency (#15) for progression.

- Educate on dietary modifications to reduce caries risk.

Follow-up Protocol

- 3-month recall for re-evaluation of #15's periapical status.

- Referral to oral surgeon for impacted wisdom tooth (#28) management.

- Schedule endodontic consultation for #15.

- 6-month recall for general monitoring of implants and suspicious lesions.