



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': [702, 721], 'tooth_id': '45', 'score': 0.96},
{'point_2d': [550, 674], 'tooth_id': '47', 'score': 0.95},
{'point_2d': [1220, 690], 'tooth_id': '37', 'score': 0.95},
{'point_2d': [1144, 715], 'tooth_id': '36', 'score': 0.95},
{'point_2d': [609, 474], 'tooth_id': '16', 'score': 0.94},
{'point_2d': [631, 703], 'tooth_id': '46', 'score': 0.94},
{'point_2d': [771, 488], 'tooth_id': '13', 'score': 0.94},
{'point_2d': [540, 469], 'tooth_id': '17', 'score': 0.92},
{'point_2d': [675, 496], 'tooth_id': '15', 'score': 0.92},
{'point_2d': [1070, 729], 'tooth_id': '35', 'score': 0.92},
{'point_2d': [1022, 734], 'tooth_id': '34', 'score': 0.91},
{'point_2d': [969, 732], 'tooth_id': '33', 'score': 0.91},
{'point_2d': [760, 722], 'tooth_id': '44', 'score': 0.9},
{'point_2d': [726, 495], 'tooth_id': '14', 'score': 0.89},
{'point_2d': [823, 486], 'tooth_id': '12', 'score': 0.89},
{'point_2d': [814, 723], 'tooth_id': '43', 'score': 0.88},
{'point_2d': [914, 499], 'tooth_id': '21', 'score': 0.87},
{'point_2d': [478, 481], 'tooth_id': '18', 'score': 0.87},
{'point_2d': [956, 485], 'tooth_id': '22', 'score': 0.87},
{'point_2d': [1006, 486], 'tooth_id': '23', 'score': 0.87},
{'point_2d': [864, 491], 'tooth_id': '11', 'score': 0.87},
{'point_2d': [1050, 508], 'tooth_id': '24', 'score': 0.86},
{'point_2d': [930, 717], 'tooth_id': '32', 'score': 0.85},
{'point_2d': [1165, 489], 'tooth_id': '26', 'score': 0.83},
{'point_2d': [854, 715], 'tooth_id': '42', 'score': 0.8},
{'point_2d': [899, 708], 'tooth_id': '31', 'score': 0.75},
{'point_2d': [879, 706], 'tooth_id': '41', 'score': 0.71},
{'point_2d': [1101, 501], 'tooth_id': '25', 'score': 0.61}
]
```

Wisdom teeth detection (total: 1):

```
[
{'box_2d': [447, 411, 509, 551], 'tooth_id': '18', 'is_impacted': false, 'score': 0.87}
]
```

Dental Pathological Findings (total: 5):

```
[
{'box_2d': [651, 389, 702, 593], 'tooth_id': '15', 'label': 'periapical radiolucency', 'score': 0.29},
{'box_2d': [911, 336, 975, 593], 'tooth_id': '22', 'label': 'calculus', 'score': 0.4},
{'box_2d': [1064, 444, 1146, 602], 'tooth_id': '25', 'label': 'caries', 'score': 0.27},
{'box_2d': [1175, 528, 1196, 569], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.58, 'near_tooth': '26'},
{'box_2d': [621, 516, 644, 557], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.43, 'near_tooth': '15'}
]
```

Historical Treatments (total: 5):

```
[
{'box_2d': [1075, 421, 1126, 577], 'tooth_id': '25', 'label': 'rc-treated', 'score': 0.73},
{'box_2d': [1201, 397, 1277, 563], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.9, 'near_tooth': '26'},
{'box_2d': [1202, 520, 1278, 563], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.81, 'near_tooth': '26'},
{'box_2d': [1075, 527, 1123, 577], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.75, 'near_tooth': '25'},
]
```

```
{'box_2d': [510, 515, 570, 554], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.69, 'near_tooth': '17'}
]
```

Medical Report

Teeth-Specific Observations

1. General Condition

A total of 28 teeth are visualized using FDI numbering. All permanent teeth are present, including the mandibular left first molar (#18), which is unimpacted and fully erupted. No evidence of missing or supernumerary teeth is noted. The dentition demonstrates adequate alignment and normal eruptive patterns.

2. Pathological Findings

- #15: Suspicious for periapical radiolucency (score: 0.29).
- #22: Areas of concern noted for calculus (score: 0.4).
- #25: Suspicious for caries (score: 0.27).
- Near #26: Suspicious for caries (score: 0.58).
- Near #15: Suggests caries involvement (score: 0.43).

3. Historical Interventions

- #25: Rc-treated tooth with coronal restoration (score: 0.73).
 - Near #26: Rc-treated tooth with crown placement (score: 0.9).
 - Near #26: Presence of a crown (score: 0.81).
 - Near #25: Presence of a crown (score: 0.75).
 - Near #17: Restoration with composite or amalgam (score: 0.69).
-

Clinical Summary & Recommendations

Priority Concerns

1. Deep caries suspicious on #25 and near #26 require urgent evaluation for restorative intervention.
2. Periapical radiolucency adjacent to #15 indicates potential endodontic pathology; further diagnostic assessment (e.g., CBCT) is warranted.
3. Calculus deposits on #22 necessitate professional scaling and polishing.

Preventive Measures

- Reinforce plaque control through biofilm disruption techniques (e.g., interdental brushes, antimicrobial rinses).
- Monitor suspicious caries near #15 and #26 for progression during 3-month recall visits.
- Educate on dietary modifications to reduce cariogenic exposure.

Follow-up Protocol

- Schedule 6-month recall for radiographic and clinical reassessment of caries lesions.
- Refer to endodontist for evaluation of #15 periapical radiolucency.
- Address calculus on #22 with prophylaxis and re-evaluate at 3-month interval.
- Consider restorative planning for #25 and #26 within 2 weeks to prevent secondary caries or fracture.