



## 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: 30):

```
[
{'point_2d': [1094, 717], 'tooth_id': '36', 'score': 0.96},
{'point_2d': [669, 708], 'tooth_id': '45', 'score': 0.95},
{'point_2d': [518, 700], 'tooth_id': '47', 'score': 0.94},
{'point_2d': [565, 522], 'tooth_id': '16', 'score': 0.93},
{'point_2d': [1190, 711], 'tooth_id': '37', 'score': 0.93},
{'point_2d': [975, 535], 'tooth_id': '23', 'score': 0.93},
{'point_2d': [1207, 521], 'tooth_id': '27', 'score': 0.93},
{'point_2d': [433, 542], 'tooth_id': '18', 'score': 0.92},
{'point_2d': [606, 699], 'tooth_id': '46', 'score': 0.92},
{'point_2d': [1023, 720], 'tooth_id': '35', 'score': 0.92},
{'point_2d': [763, 714], 'tooth_id': '43', 'score': 0.91},
{'point_2d': [1020, 537], 'tooth_id': '24', 'score': 0.91},
{'point_2d': [497, 517], 'tooth_id': '17', 'score': 0.91},
{'point_2d': [925, 530], 'tooth_id': '22', 'score': 0.9},
{'point_2d': [624, 523], 'tooth_id': '15', 'score': 0.9},
{'point_2d': [934, 724], 'tooth_id': '33', 'score': 0.9},
{'point_2d': [709, 524], 'tooth_id': '13', 'score': 0.9},
{'point_2d': [714, 703], 'tooth_id': '44', 'score': 0.9},
{'point_2d': [1132, 529], 'tooth_id': '26', 'score': 0.89},
{'point_2d': [1068, 535], 'tooth_id': '25', 'score': 0.89},
{'point_2d': [671, 537], 'tooth_id': '14', 'score': 0.88},
{'point_2d': [873, 529], 'tooth_id': '21', 'score': 0.88},
{'point_2d': [978, 716], 'tooth_id': '34', 'score': 0.88},
{'point_2d': [806, 706], 'tooth_id': '42', 'score': 0.88},
{'point_2d': [761, 530], 'tooth_id': '12', 'score': 0.81},
{'point_2d': [838, 715], 'tooth_id': '41', 'score': 0.79},
{'point_2d': [813, 528], 'tooth_id': '11', 'score': 0.77},
{'point_2d': [894, 713], 'tooth_id': '32', 'score': 0.76},
{'point_2d': [865, 711], 'tooth_id': '31', 'score': 0.74},
{'point_2d': [1277, 553], 'tooth_id': '28', 'score': 0.73}
]
```

Wisdom teeth detection (total: 2):

```
[
{'box_2d': [396, 460, 469, 624], 'tooth_id': '18', 'is_impacted': false, 'score': 0.92},
{'box_2d': [1240, 473, 1315, 634], 'tooth_id': '28', 'is_impacted': false, 'score': 0.73}
]
```

Dental Pathological Findings (total: 5):

```
[
{'box_2d': [616, 446, 727, 613], 'tooth_id': '13', 'label': 'calculus', 'score': 0.38},
{'box_2d': [768, 453, 915, 606], 'tooth_id': '21', 'label': 'calculus', 'score': 0.39},
{'box_2d': [861, 424, 935, 616], 'tooth_id': '21', 'label': 'calculus', 'score': 0.37},
{'box_2d': [716, 464, 837, 607], 'tooth_id': '12', 'label': 'calculus', 'score': 0.45},
{'box_2d': [1208, 544, 1238, 576], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.41, 'near_tooth': '27'}
]
```

Historical Treatments (total: 0):

```
[
]
```

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# Medical Report

## Oral Panoramic Radiographic Examination Report

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### \*\*Teeth-Specific Observations\*\*

#### #### General Condition

A total of 30 teeth are visualized. Wisdom teeth (#18 and #28) are present and **not impacted**. No evidence of dental implants, crowns, or root canal treatments is observed.

#### #### Pathological Findings

- **Calculus deposits:**
- **Suspicious for calculus** noted on #12, #13, and #21 (areas of concern for mineralized biofilm).
- **Suspicious for caries:** A small radiolucent lesion is observed **near tooth #27** (interproximal region).

#### #### Historical Interventions

No prior restorations, crowns, or endodontic treatments are detected.

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### \*\*Clinical Summary & Recommendations\*\*

#### #### Priority Concerns

1. **Caries suspicion near #27:** Immediate evaluation required to confirm carious involvement and prevent progression.
2. **Calculus deposits on #12, #13, #21:** Indicates localized plaque accumulation necessitating professional scaling.

#### #### Preventive Measures

- Reinforce oral hygiene practices, emphasizing interdental cleaning (flossing or interdental brushes) for affected quadrants.
- Monitor calculus-prone areas during routine hygiene visits.

#### #### Follow-up Protocol

- Schedule a **6-month recall** for professional scaling and reevaluation of calculus deposits.
  - Reassess the suspicious carious lesion near #27 with targeted radiographs or visual examination.
  - Consider referral to a periodontist for calculus management if biofilm control remains suboptimal.
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Generated in compliance with FDI tooth numbering and clinical best practices.