



## 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: 31):

```
[
{'point_2d': [665, 711], 'tooth_id': '45', 'score': 0.94},
{'point_2d': [1114, 710], 'tooth_id': '36', 'score': 0.94},
{'point_2d': [498, 685], 'tooth_id': '47', 'score': 0.94},
{'point_2d': [1207, 686], 'tooth_id': '37', 'score': 0.94},
{'point_2d': [590, 706], 'tooth_id': '46', 'score': 0.93},
{'point_2d': [471, 494], 'tooth_id': '17', 'score': 0.92},
{'point_2d': [714, 512], 'tooth_id': '13', 'score': 0.92},
{'point_2d': [546, 521], 'tooth_id': '16', 'score': 0.91},
{'point_2d': [1007, 727], 'tooth_id': '34', 'score': 0.91},
{'point_2d': [1243, 510], 'tooth_id': '27', 'score': 0.91},
{'point_2d': [762, 730], 'tooth_id': '43', 'score': 0.9},
{'point_2d': [1095, 512], 'tooth_id': '25', 'score': 0.9},
{'point_2d': [1043, 721], 'tooth_id': '35', 'score': 0.9},
{'point_2d': [989, 505], 'tooth_id': '23', 'score': 0.89},
{'point_2d': [880, 522], 'tooth_id': '21', 'score': 0.89},
{'point_2d': [960, 741], 'tooth_id': '33', 'score': 0.89},
{'point_2d': [770, 522], 'tooth_id': '12', 'score': 0.89},
{'point_2d': [610, 523], 'tooth_id': '15', 'score': 0.89},
{'point_2d': [1164, 518], 'tooth_id': '26', 'score': 0.88},
{'point_2d': [397, 502], 'tooth_id': '18', 'score': 0.87},
{'point_2d': [711, 721], 'tooth_id': '44', 'score': 0.87},
{'point_2d': [938, 527], 'tooth_id': '22', 'score': 0.86},
{'point_2d': [822, 522], 'tooth_id': '11', 'score': 0.86},
{'point_2d': [810, 716], 'tooth_id': '42', 'score': 0.86},
{'point_2d': [879, 728], 'tooth_id': '31', 'score': 0.85},
{'point_2d': [846, 727], 'tooth_id': '41', 'score': 0.83},
{'point_2d': [910, 732], 'tooth_id': '32', 'score': 0.82},
{'point_2d': [1312, 528], 'tooth_id': '28', 'score': 0.81},
{'point_2d': [1042, 512], 'tooth_id': '24', 'score': 0.81},
{'point_2d': [656, 516], 'tooth_id': '14', 'score': 0.77},
{'point_2d': [429, 659], 'tooth_id': '48', 'score': 0.75}
]
```

Wisdom teeth detection (total: 3):

```
[
{'box_2d': [361, 425, 433, 579], 'tooth_id': '18', 'is_impacted': false, 'score': 0.87},
{'box_2d': [1275, 443, 1350, 613], 'tooth_id': '28', 'is_impacted': false, 'score': 0.81},
{'box_2d': [386, 597, 472, 722], 'tooth_id': '48', 'is_impacted': false, 'score': 0.75}
]
```

Dental Pathological Findings (total: 2):

```
[
{'box_2d': [839, 405, 893, 614], 'tooth_id': '21', 'label': 'calculus', 'score': 0.38},
{'box_2d': [889, 398, 948, 619], 'tooth_id': '22', 'label': 'calculus', 'score': 0.38}
]
```

Historical Treatments (total: 0):

```
[
]
```

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# Medical Report

## Teeth-Specific Observations

### 1. General Condition

- A total of 31 teeth are visualized within the panoramic field.
- All three wisdom teeth (#18, #28, #48) are present and not impacted.

### 2. Pathological Findings

- **#21**: Suspicious for calculus deposits.
- **#22**: Suspicious for calculus deposits.
- **Near #48**: Areas of concern noted for unclear visualization, potentially affecting diagnostic accuracy.

### 3. Historical Interventions

- No prior dental treatments (restorations, crowns, root canal treatments, or implants) are documented in the imaging data.
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## Clinical Summary & Recommendations

### 1. Priority Concerns

- Suspected calculus deposits on **#21** and **#22** require professional evaluation to confirm presence and mitigate periodontal risk.
- Reduced visualization of **#48** may necessitate supplementary imaging (e.g., periapical radiograph) for definitive assessment.

### 2. Preventive Measures

- Reinforce oral hygiene protocols, emphasizing interproximal cleaning for **#21** and **#22** to address suspected calculus.
- Schedule periodic prophylaxis to prevent calculus progression.

### 3. Follow-up Protocol

- Immediate referral for scaling and root planing if calculus is confirmed clinically.
- Repeat panoramic imaging in 3–6 months to reassess **#48** visibility and monitor calculus status.
- Recall in 6 months for comprehensive periodontal evaluation.