



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: 32):

```
[  
{'point_2d': [1146, 612], 'tooth_id': '36', 'score': 0.96},  
{'point_2d': [1228, 577], 'tooth_id': '37', 'score': 0.95},  
{'point_2d': [608, 637], 'tooth_id': '45', 'score': 0.95},  
{'point_2d': [443, 589], 'tooth_id': '47', 'score': 0.94},  
{'point_2d': [371, 539], 'tooth_id': '48', 'score': 0.93},  
{'point_2d': [393, 400], 'tooth_id': '18', 'score': 0.93},  
{'point_2d': [956, 640], 'tooth_id': '33', 'score': 0.93},  
{'point_2d': [1069, 641], 'tooth_id': '35', 'score': 0.93},  
{'point_2d': [657, 635], 'tooth_id': '44', 'score': 0.92},  
{'point_2d': [1201, 419], 'tooth_id': '27', 'score': 0.92},  
{'point_2d': [531, 619], 'tooth_id': '46', 'score': 0.92},  
{'point_2d': [1305, 528], 'tooth_id': '38', 'score': 0.92},  
{'point_2d': [924, 462], 'tooth_id': '22', 'score': 0.91},  
{'point_2d': [1071, 452], 'tooth_id': '25', 'score': 0.91},  
{'point_2d': [530, 447], 'tooth_id': '16', 'score': 0.9},  
{'point_2d': [1009, 637], 'tooth_id': '34', 'score': 0.9},  
{'point_2d': [1023, 465], 'tooth_id': '24', 'score': 0.9},  
{'point_2d': [1133, 438], 'tooth_id': '26', 'score': 0.89},  
{'point_2d': [729, 463], 'tooth_id': '12', 'score': 0.89},  
{'point_2d': [700, 645], 'tooth_id': '43', 'score': 0.89},  
{'point_2d': [591, 459], 'tooth_id': '15', 'score': 0.89},  
{'point_2d': [844, 631], 'tooth_id': '31', 'score': 0.88},  
{'point_2d': [638, 466], 'tooth_id': '14', 'score': 0.87},  
{'point_2d': [670, 469], 'tooth_id': '13', 'score': 0.87},  
{'point_2d': [856, 461], 'tooth_id': '21', 'score': 0.86},  
{'point_2d': [454, 429], 'tooth_id': '17', 'score': 0.85},  
{'point_2d': [780, 458], 'tooth_id': '11', 'score': 0.85},  
{'point_2d': [980, 454], 'tooth_id': '23', 'score': 0.85},  
{'point_2d': [904, 631], 'tooth_id': '32', 'score': 0.84},  
{'point_2d': [758, 638], 'tooth_id': '42', 'score': 0.83},  
{'point_2d': [1264, 397], 'tooth_id': '28', 'score': 0.8},  
{'point_2d': [797, 633], 'tooth_id': '41', 'score': 0.74}  
]
```

Wisdom teeth detection (total: 4):

```
[  
{'box_2d': [313, 467, 429, 611], 'tooth_id': '48', 'is_impacted': false, 'score': 0.93},  
{'box_2d': [355, 330, 431, 469], 'tooth_id': '18', 'is_impacted': false, 'score': 0.93},  
{'box_2d': [1250, 459, 1360, 596], 'tooth_id': '38', 'is_impacted': false, 'score': 0.92},  
{'box_2d': [1218, 328, 1310, 465], 'tooth_id': '28', 'is_impacted': false, 'score': 0.8}  
]
```

Dental Pathological Findings (total: 2):

```
[  
{'box_2d': [709, 363, 804, 551], 'tooth_id': '12', 'label': 'calculus', 'score': 0.38},  
{'box_2d': [498, 454, 517, 479], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.19, 'near_tooth': '16'}  
]
```

Historical Treatments (total: 0):

[
]

Medical Report

ORAL PANORAMIC X-RAY EXAMINATION REPORT

Teeth-Specific Observations

General Condition

A total of 32 teeth are visualized, with all anatomical structures and dental crowns fully erupted. All four wisdom teeth (#18, #28, #38, #48) are present and not impacted.

Pathological Findings

- **Tooth #12 (FDI 12):** Suspected calculus deposition noted at the root apices, with radiopaque density changes.
- **Area near tooth #16 (FDI 16):** Areas of concern for early carious lesion identified lateral to the mesial root, consistent with a small radiolucent shadow.

Historical Interventions

No restorations, crowns, root canal treatments, or implants are observed.

Clinical Summary & Recommendations

Priority Concerns

1. **Suspected calculus on #12:** Requires further clinical evaluation to confirm presence and extent.
2. **Caries suspicion near #16:** Early carious involvement warrants close monitoring to prevent progression.

Preventive Measures

- Reinforce biofilm control through improved interproximal brushing and flossing techniques.
- Schedule professional scaling for suspected calculus on #12 to mitigate periodontal risk.

Follow-up Protocol

- **Referral to periodontist:** For assessment of calculus on #12 and potential instrumentation.
 - **6-month recall:** To reassess the carious lesion near #16 using clinical and radiographic correlation.
 - **Oral hygiene counseling:** Focus on high-risk areas, including the mesial aspect of #16.
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Generated by AI assistant for clinical documentation. Final interpretation by a licensed dental professional is required.