# 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: 25):
[
{'point_2d': [590, 660], 'tooth_id': '46', 'score': 0.97},
{'point_2d': [1172, 652], 'tooth_id': '36', 'score': 0.95},
{'point_2d': [667, 689], 'tooth_id': '45', 'score': 0.94},
{'point_2d': [995, 717], 'tooth_id': '33', 'score': 0.93},
{'point_2d': [571, 440], 'tooth_id': '16', 'score': 0.93},
{'point_2d': [900, 696], 'tooth_id': '31', 'score': 0.93},
{'point_2d': [496, 430], 'tooth_id': '17', 'score': 0.92},
{'point_2d': [746, 473], 'tooth_id': '13', 'score': 0.92},
{'point_2d': [901, 490], 'tooth_id': '21', 'score': 0.92},
{'point_2d': [802, 480], 'tooth_id': '12', 'score': 0.91},
{'point_2d': [1257, 618], 'tooth_id': '37', 'score': 0.91},
{'point_2d': [1253, 410], 'tooth_id': '27', 'score': 0.9},
{'point_2d': [1176, 430], 'tooth_id': '26', 'score': 0.9},
{'point_2d': [943, 705], 'tooth_id': '32', 'score': 0.89},
{'point_2d': [1110, 458], 'tooth_id': '25', 'score': 0.88},
{'point_2d': [849, 490], 'tooth_id': '11', 'score': 0.88},
{'point_2d': [957, 483], 'tooth_id': '22', 'score': 0.88},
{'point_2d': [1058, 466], 'tooth_id': '24', 'score': 0.88},
{'point_2d': [1011, 468], 'tooth_id': '23', 'score': 0.86},
{'point_2d': [1099, 680], 'tooth_id': '35', 'score': 0.84},
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{'point_2d': [775, 713], 'tooth_id': '43', 'score': 0.83},
{'point_2d': [836, 705], 'tooth_id': '42', 'score': 0.82},
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]

Wisdom teeth detection (total: 0):
[
]

Dental Pathological Findings (total: 13):
[
{'box_2d': [575, 338, 622, 539], 'tooth_id': '16', 'label': 'periapical radiolucency', 'score': 0.28},
{'box_2d': [1294, 537, 1384, 667], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.93, 'near_tooth': '37'},
{'box_2d': [354, 547, 459, 691], 'tooth_id': 'unknown', 'label': 'impacted', 'score': 0.92, 'near_tooth': '46'},
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{'box_2d': [1223, 550, 1249, 573], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.75, 'near_tooth': '37'},
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{'box_2d': [561, 572, 610, 618], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.48, 'near_tooth': '46'},
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{'box_2d': [535, 457, 553, 483], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.22, 'near_tooth': '16'},
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]

Historical Treatments (total: 6):

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{'box_2d': [610, 381, 672, 557], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.93, 'near_tooth': '16'},
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{'box_2d': [668, 503, 727, 562], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.84, 'near_tooth': '13'},
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]

# Medical Report

**Oral Panoramic X-ray Examination Report**

**Teeth-Specific Observations**

#### General Condition

A total of 25 teeth were visualized, with no evidence of erupting wisdom teeth. All permanent teeth in the field of view appear to be in functional occlusion.

#### Pathological Findings

1. **Impacted Teeth**:

- Clear indication of an impacted tooth near **#37** (right maxillary first molar) and **#46** (left mandibular first molar).

- Suspicious for impacted tooth near **#17** (left mandibular second molar) with low confidence.

2. **Caries**:

- Suspicious for carious lesions near **#37**, **#26** (right mandibular first molar), and **#36** (right maxillary first molar).

- Areas of concern noted for potential caries near **#46**, **#16** (left mandibular first molar), **#13** (left maxillary lateral incisor), **#25** (right mandibular second premolar), and **#24** (right mandibular first molar).

3. **Periapical Radiolucency**:

- Area of concern noted near **#16** (left mandibular first molar), requiring further evaluation.

#### Historical Interventions

1. **Restorations**:

- Presence of a restoration near **#46** (left mandibular first molar).

2. **Root Canal Treatments (RCT)**:

- RCT-treated tooth near **#16** (left mandibular first molar) and **#46** (left mandibular first molar).

- RCT-treated tooth near **#13** (left maxillary lateral incisor).

3. **Crowns**:

- Crowns identified near **#16** (left mandibular first molar) and **#13** (left maxillary lateral incisor).

**Clinical Summary & Recommendations**

#### Priority Concerns

1. **Impacted Teeth**:

- Impacted tooth near **#37** and **#46** requires evaluation for surgical removal or orthodontic intervention.

2. **High-Risk Caries**:

- Suspected carious lesions near **#37** and **#26** warrant immediate assessment for intervention.

3. **Periapical Radiolucency**:

- Radiolucency near **#16** should be evaluated for apical pathology or residual infection post-RCT.

#### Preventive Measures

- Reinforce oral hygiene instruction, emphasizing interproximal cleaning for high-risk areas (#37, #26).

- Monitor suspicious caries near **#46**, **#13**, and **#25** for progression.

#### Follow-up Protocol

- **6-month recall** for radiographic and clinical reassessment of caries and impacted teeth.

- **Referral to endodontist** for evaluation of periapical radiolucency near **#16**.

- **Referral to oral surgeon** for impacted teeth near **#37** and **#46** to assess surgical feasibility.

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*Report generated by AI-assisted analysis. Clinical correlation and intraoral examination recommended for definitive diagnosis.*