



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: 12):

```
[
  {'point_2d': [924, 459], 'tooth_id': '21', 'score': 0.95},
  {'point_2d': [1215, 611], 'tooth_id': '37', 'score': 0.93},
  {'point_2d': [851, 662], 'tooth_id': '42', 'score': 0.91},
  {'point_2d': [1006, 667], 'tooth_id': '33', 'score': 0.9},
  {'point_2d': [1102, 649], 'tooth_id': '35', 'score': 0.89},
  {'point_2d': [810, 667], 'tooth_id': '43', 'score': 0.87},
  {'point_2d': [1143, 466], 'tooth_id': '26', 'score': 0.86},
  {'point_2d': [878, 657], 'tooth_id': '41', 'score': 0.85},
  {'point_2d': [964, 658], 'tooth_id': '32', 'score': 0.85},
  {'point_2d': [926, 654], 'tooth_id': '31', 'score': 0.84},
  {'point_2d': [1013, 449], 'tooth_id': '23', 'score': 0.7},
  {'point_2d': [1227, 591], 'tooth_id': '47', 'score': 0.65}
]
```

Wisdom teeth detection (total: 0):

```
[
]
```

Dental Pathological Findings (total: 2):

```
[
  {'box_2d': [592, 671, 635, 721], 'tooth_id': 'unknown', 'label': 'periapical radiolucency', 'score': 0.51, 'near_tooth': '43'},
  {'box_2d': [1082, 571, 1121, 611], 'tooth_id': 'unknown', 'label': 'caries', 'score': 0.29, 'near_tooth': '35'}
]
```

Historical Treatments (total: 15):

```
[
  {'box_2d': [1022, 572, 1071, 633], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.94, 'near_tooth': '35'},
  {'box_2d': [492, 509, 618, 666], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.92, 'near_tooth': '43'},
  {'box_2d': [641, 381, 704, 535], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.92, 'near_tooth': '43'},
  {'box_2d': [580, 543, 696, 697], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.91, 'near_tooth': '43'},
  {'box_2d': [735, 572, 796, 635], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.9, 'near_tooth': '43'},
  {'box_2d': [733, 572, 797, 719], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.9, 'near_tooth': '43'},
  {'box_2d': [1021, 573, 1072, 735], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.88, 'near_tooth': '33'},
  {'box_2d': [848, 372, 903, 539], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.88, 'near_tooth': '21'},
  {'box_2d': [681, 566, 744, 728], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.86, 'near_tooth': '43'},
  {'box_2d': [635, 468, 1182, 548], 'tooth_id': 'unknown', 'label': 'restoration', 'score': 0.86, 'near_tooth': '21'},
  {'box_2d': [608, 544, 697, 603], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.86, 'near_tooth': '43'},
  {'box_2d': [942, 390, 992, 540], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.86, 'near_tooth': '21'},
  {'box_2d': [514, 510, 616, 568], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.85, 'near_tooth': '43'},
  {'box_2d': [804, 371, 847, 540], 'tooth_id': 'unknown', 'label': 'rc-treated', 'score': 0.82, 'near_tooth': '21'},
  {'box_2d': [690, 566, 745, 623], 'tooth_id': 'unknown', 'label': 'crown', 'score': 0.75, 'near_tooth': '43'}
]
```

Medical Report

Oral Panoramic X-ray Examination Report

****Teeth-Specific Observations****

General Condition

A total of 12 teeth were visualized with identifiable FDI numbering. The panoramic field demonstrates partial visibility of the dentition, with notable absence of wisdom teeth (no third molars detected). Visualized teeth include #21, #23, #26, #31, #32, #33, #35, #37, #41, #42, #43, and #47. Image quality limitations may affect detection of lower-confidence findings (e.g., #23 and #47, with scores of 0.7 and 0.65, respectively).

Pathological Findings

1. **Suspicious for periapical radiolucency** near **#43**, consistent with potential apical pathology.
2. **Suspicious for caries** near **#35**, requiring further evaluation for confirmation.

Historical Interventions

1. **#21**: Evidence of root canal treatment (multiple segments), associated restoration, and crown.
 2. **#33**: Root canal-treated tooth with no visible restoration.
 3. **#35**: Presence of a crown adjacent to suspicious caries.
 4. **#43**: Extensive root canal treatment (multiple segments), crowns, and restorations near suspicious periapical radiolucency.
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****Clinical Summary & Recommendations****

Priority Concerns

1. **High suspicion for periapical radiolucency near #43** (likely apical periodontitis) despite prior root canal treatment.
2. **Potential caries on #35** adjacent to existing crown; concerns for secondary caries or marginal breakdown.
3. **No wisdom teeth detected**, consistent with agenesis or complete absence.

Preventive Measures

1. Reinforce oral hygiene education, emphasizing interproximal cleaning around #43 and #35.
2. Monitor areas of concern (e.g., suspicious caries near #35) with serial imaging and clinical correlation.
3. Consider dietary counseling to reduce cariogenic risk.

Follow-up Protocol

1. **Urgent referral to endodontist** for evaluation of #43 to confirm apical pathology and assess need for retreatment or apicoectomy.
 2. **Referral to general dentist** for reassessment of #35's crown integrity and caries management.
 3. **6-month recall** for imaging follow-up to monitor suspicious regions.
 4. Schedule **periodic panoramic imaging** to track changes in apical status and overall restorative outcomes.
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Generated in accordance with FDI numbering system and clinical imaging guidelines.