

Caring for Mateo's Teeth and Bite

Why does a cleft lip and palate change the teeth and bite, and why is dental care spread across many years?

CARRY FORWARD

Cleft-related middle-ear fluid can reduce hearing, so repeated hearing checks protect speech development.

10-YEAR TAKEAWAY

Dental and orthodontic care is staged because teeth, bone, and facial growth change on different schedules.

Cells differentiate	Development sculpts	Cells move	Development can go wrong
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1. Observe the analogy before naming the biology

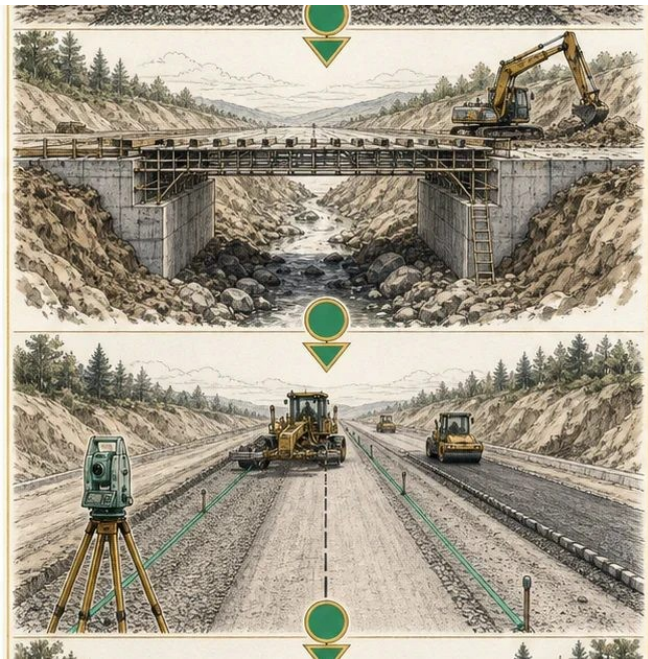


Illustration: Build the roadbed before aligning the lanes

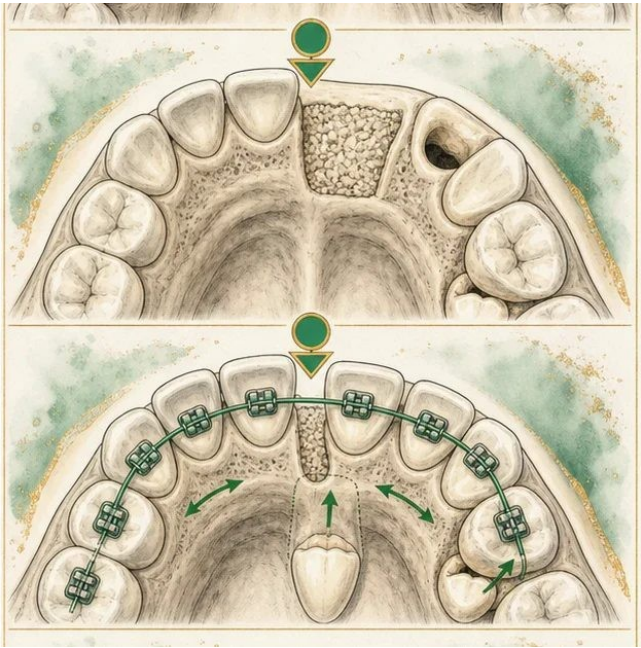
- 1. Which step must happen before lanes can be aligned?
- 2. What would fail if final paving came first?
- 3. Which conditions would make the schedule change?

2. Turn observations into rules

- 1. Rule 1: Foundation changes can precede alignment. Explain it in your own words.
- 2. Rule 2: Sequence depends on growth and eruption. Explain it in your own words.
- 3. Rule 3: Different specialists own connected steps. Explain it in your own words.

Where the analogy stops: Teeth and bone are living tissues, not asphalt. The analogy models sequence and dependency.

3. Map the rules onto the biomedical example



Biomedical teaching illustration: Sequence care through the tooth-bearing cleft

Analogy step	Biology step	How the relationship stays the same
Broken roadbed	Gap in the alveolar ridge	
Rebuild foundation	Alveolar bone graft restores bone continuity	
Align lanes	Orthodontics guides tooth position and bite	

4. Use the case evidence

ID	Finding supplied in the case	Why it matters
D14-E1	Mateo's cleft passes through the left tooth-bearing alveolar ridge.	Teeth and supporting bone near the cleft are at risk for predictable differences.
D14-E2	One lateral incisor is missing and nearby teeth are rotated.	The dental pattern matches the location of the cleft.
D14-E3	The permanent canine has not yet reached the usual graft-planning stage.	The team must monitor growth and eruption before choosing the next procedure.

5. Make the clinical decision

You are the orthodontist at today's team conference. The family asks whether all tooth and bone work should happen immediately.

- A. Use preventive dental care now and coordinate later graft and orthodontic timing with eruption
- B. Complete every procedure now
- C. Ignore the missing tooth until adulthood

Decision. Choose the staged plan and identify what happens now versus what waits for a developmental marker.

Claim ceiling: You may outline the sequence. You may not set a surgery date without current imaging and eruption assessment.

Claim. State the choice you can defend.

Evidence. Use these labeled IDs: D14-E1 + D14-E2 + D14-E3.

Reasoning. Explain why the evidence supports the claim and stays inside the claim ceiling.

6. Reduce the lesson to one lasting idea

Take-home. Dental and orthodontic care is staged because teeth, bone, and facial growth change on different schedules.

1. Why are tooth differences predictable near the cleft?
2. Which developmental marker helps time later care?

Glossary

Term	Plain-English definition
alveolus (alveolar ridge)	The bony ridge of the upper or lower jaw that holds the tooth sockets; a cleft can break this ridge near the front teeth.
hypodontia	A developmental condition in which one or a few teeth never form, leaving permanent gaps in the dental arch.
supernumerary tooth	An extra tooth beyond the normal count, which can appear near a cleft and crowd or block the regular teeth.
malocclusion	A misalignment of the upper and lower teeth so they do not meet properly when the jaws close.
alveolar bone grafting	A surgery that fills the bony gap in the upper gum of a cleft patient with bone, usually taken from the hip, so adult teeth can grow in.

Next lesson unlock

We answered why the cleft changes Mateo's teeth and bite and why dental care is staged. But now Mateo has a lot going on at once: surgeries, speech therapy, ear care, and dental visits. With all of that, how do we make sure the most basic thing is still on track, that he is actually growing and developing well overall?

The journal links on the lesson page are optional. Everything required for this guided-notes set is already supplied here and in the case file.