

Frenums, Tongue-tie, Ankyloglossia

Year - 2001

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Slide #1 of 109 slides.

**All of the following are
correct spellings:**

Frenulum, frenulums, frenula

Frenum, frenums, frena

Frenotomy, frenectomy

Tongue-tie, tongue-tied

All spellings can be found in medical dictionaries

Incidence of ankyloglossia

4.8%

- affects more males at almost a 3:1 ratio
- 1/4 of breastfed infants had difficulty breastfeeding.

Conclusions:

- Tongue-tie is common
- It may affect breastfeeding adversely

Messner AH, Ankyloglossia: incidence and associated feeding difficulties, Arch Otolaryngol Neck Surg 2000 Jan;126(1):36-9.

Ankyloglossia Symptoms

- Heart shape of tongue when raised.
- Cannot extend tongue out to a point.
- Tongue curves down when extended.
- Usually leads to a deviate swallow.
- Possible speech problems.
- May have trouble swallowing pills.
- May have digestive problems.
- Difficulty in licking ice-cream cones.
- Difficulty in kissing.

Examples of tight frenums



6

(1976) Age 3 years - Frenum already causing teeth to rotate



7

New born with tight frenum and heart shaped tongue. (Dr. Notestine)



8

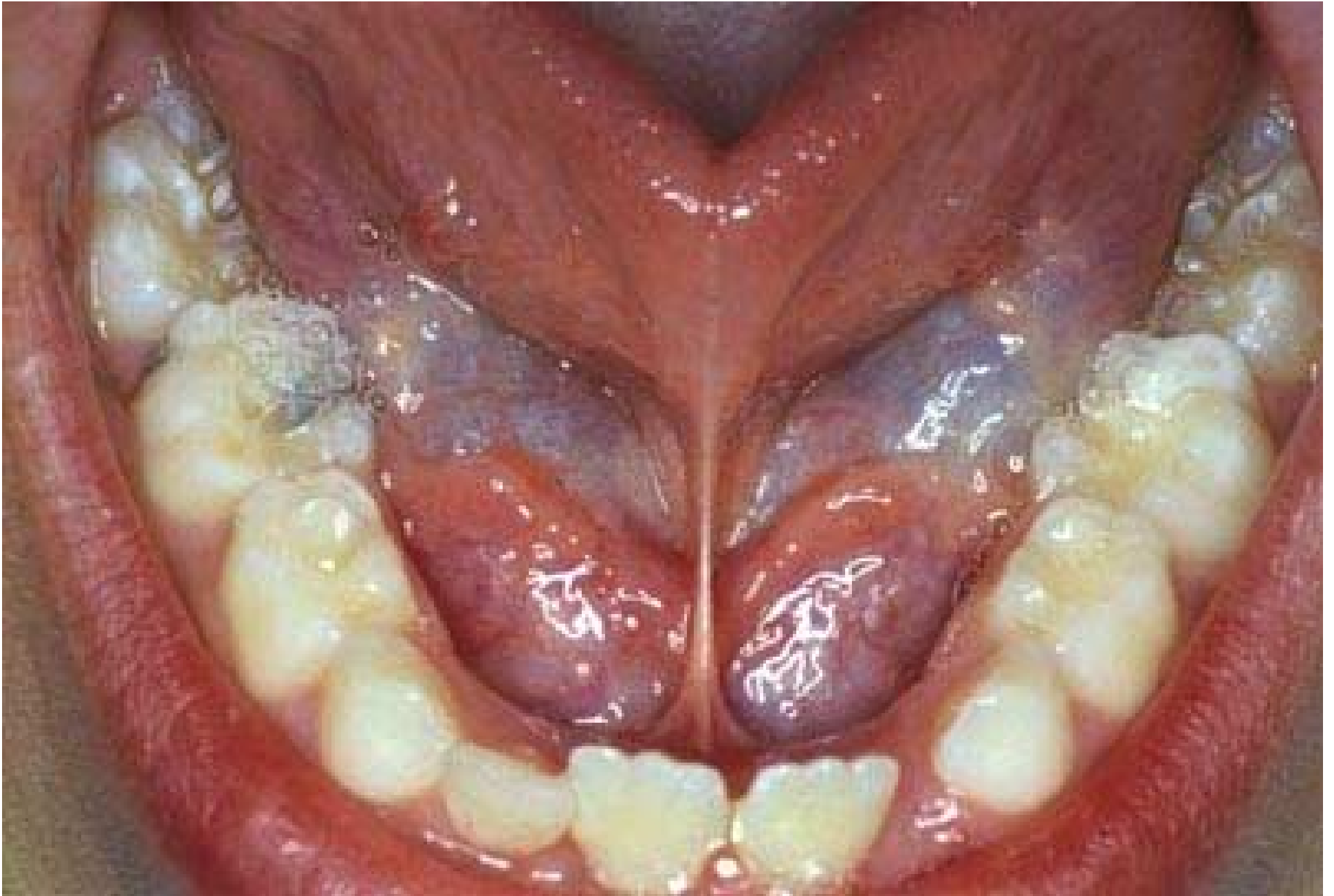
Tight thick frenum with classical heart shape of tongue. (Dr.Notestine)



3 month old who was weaned because of breastfeeding difficulties.

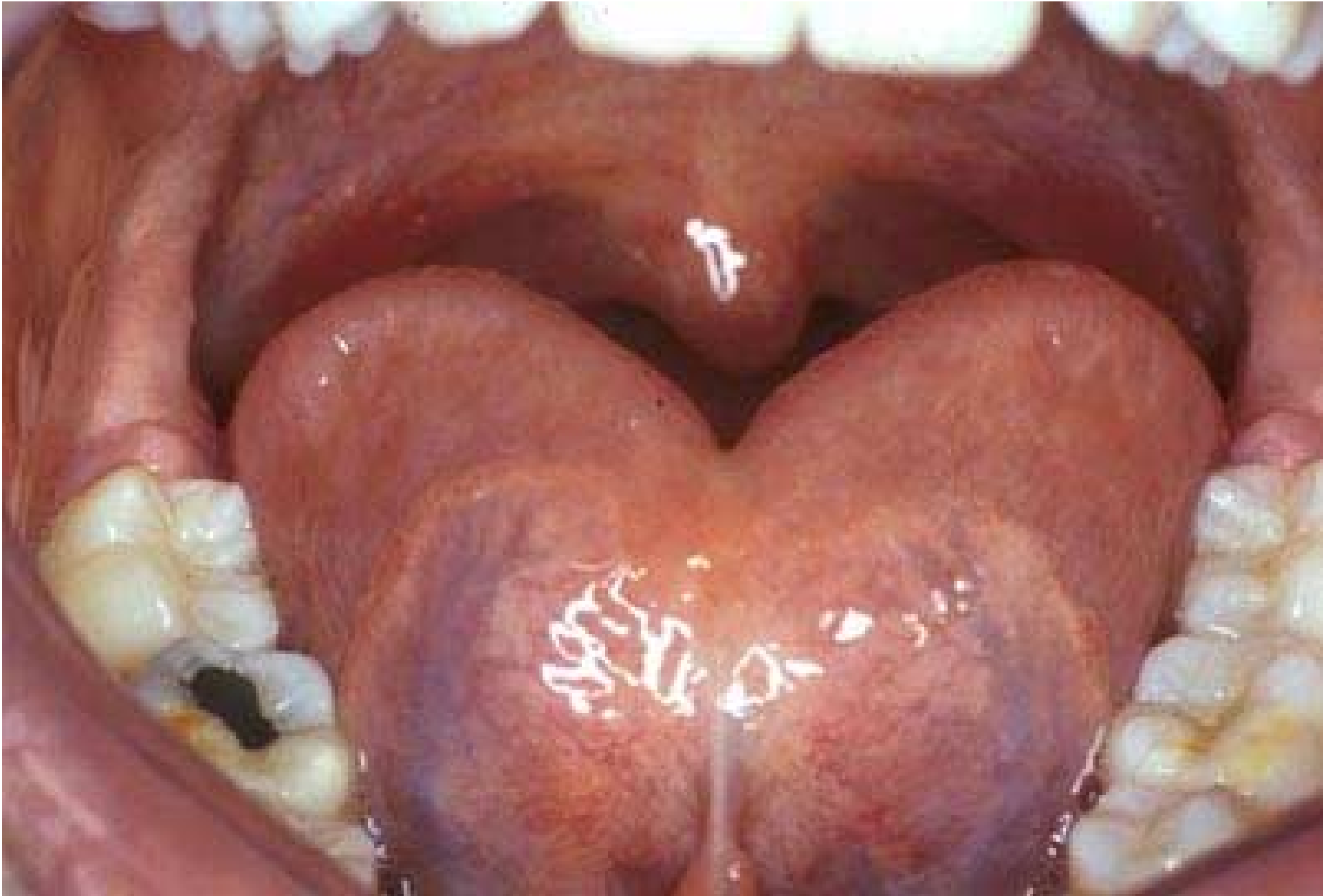


10 (1993) Age 4 months - Note lesion on frenum caused by teeth.



11

(1996) Age - 6 1/2 years.



12 (1996) Teenager - Very classical heart shape of tongue.



13 Young adult with tongue-tied heart-shaped tongue and tongue bar!



14 (1992) Adult patient extending tongue as far out as she can.



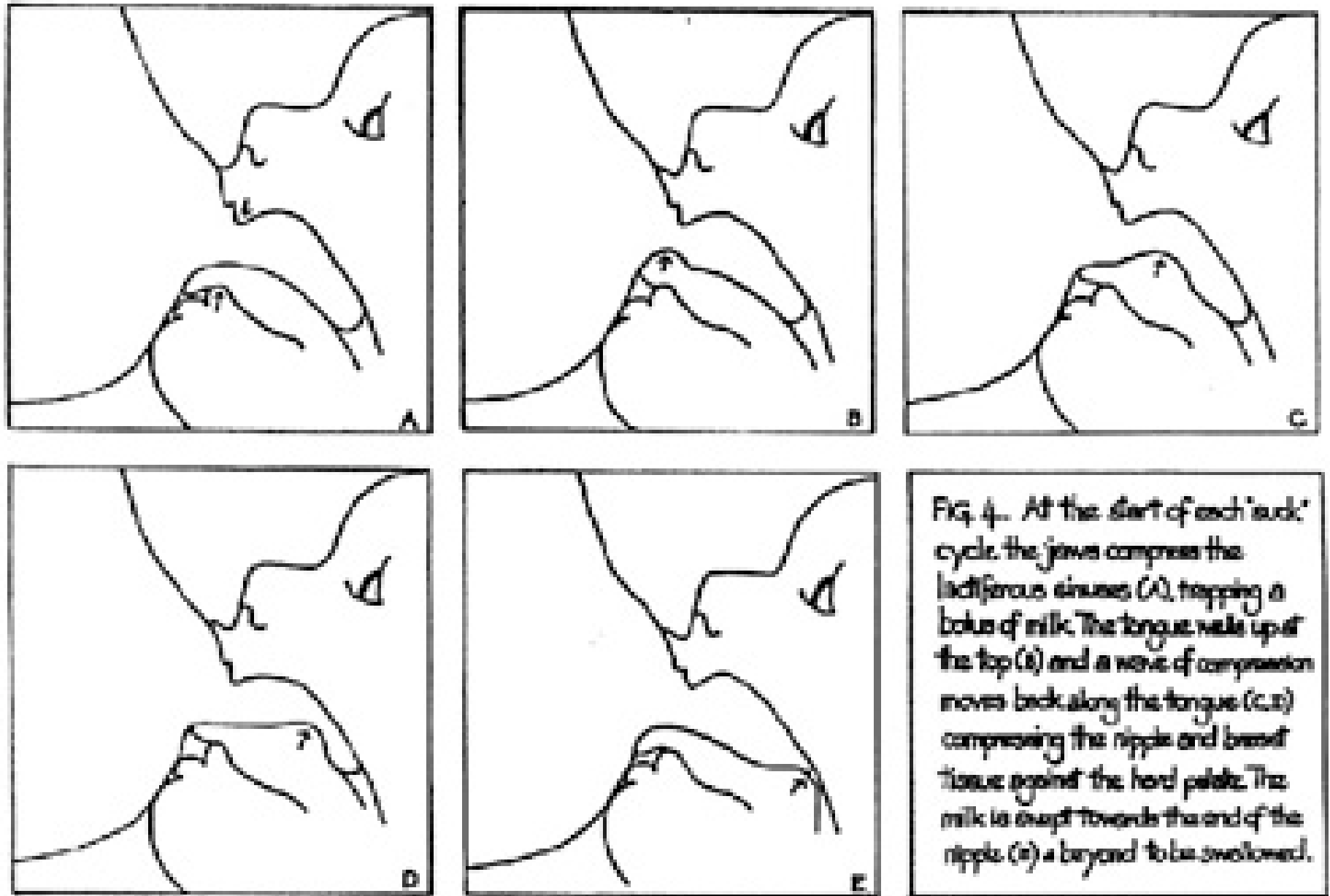
15 Retired MD - Tongue curls down and cannot extend past lip.

Trying to talk, eat, or swallow
with a tight lingual frenum is like
trying to run a marathon with
your shoes tied together.

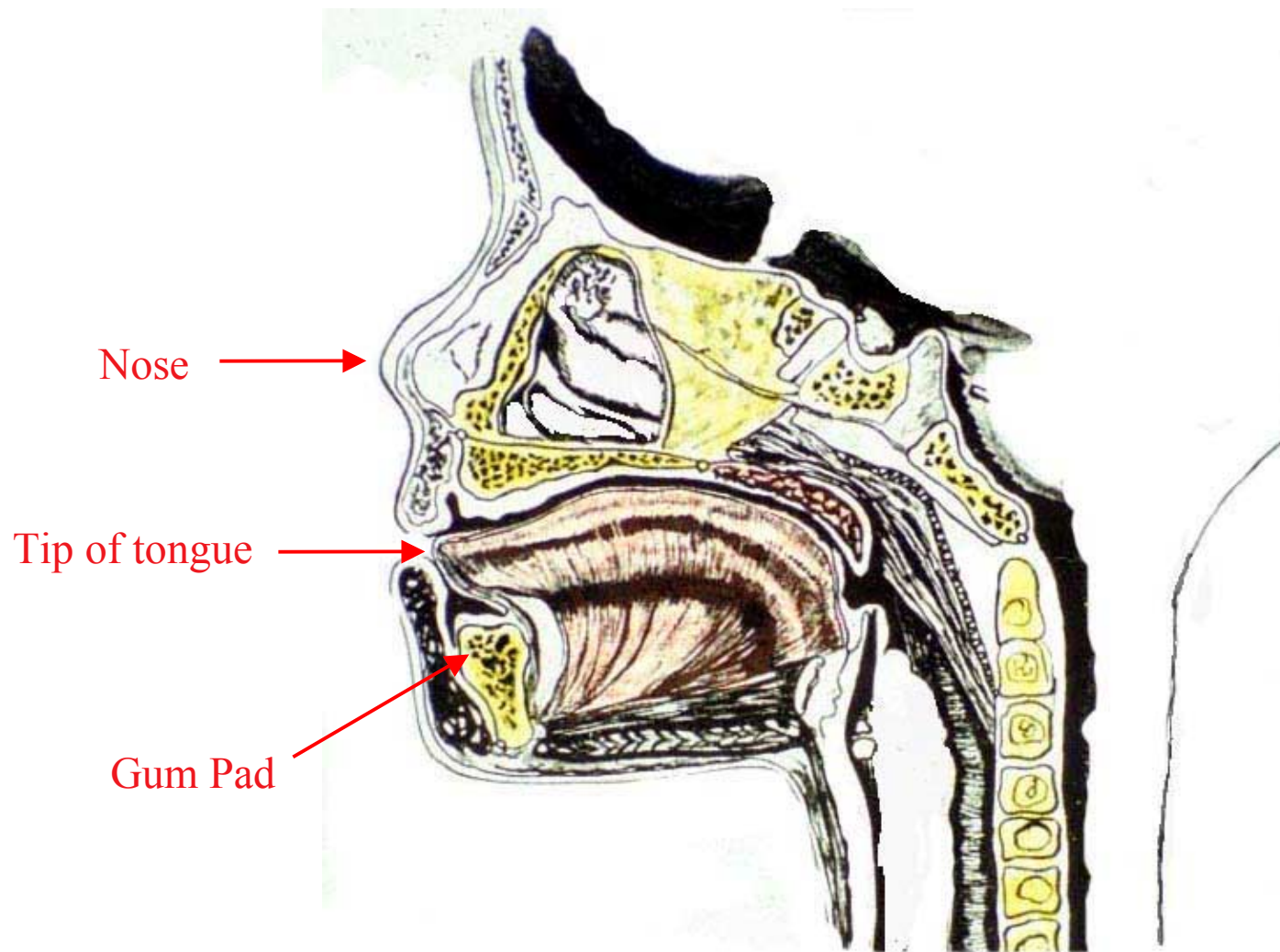
You will NEVER win a race until
you are told about your problem!

Ankyloglossia and Breastfeeding

- Nipple trauma and pain
 - Compression against gum pad instead of tongue
- Inefficient, inadequate suckling, poor seal.
- Limited action of tongue /poor wave motion.
- Lengthy feedings.
- Failure to thrive.
- Often switched to bottle.



18 Illustration from Ros Escott article, Positioning, Attachment and Milk Transfer, Breastfeeding Review, 1989, p.35.



Habitual tongue posture of newborn infant

Tip of tongue extends over and past the gum pad

Surgical Indications

- Breastfeeding difficulties.
- Speech impediments
- Dental problems
- Medical problems
 - Indigestion
 - Snoring and sleep apnea
- Personal / Social reasons
 - Licking ice-cream cones
 - Kissing

Treatment Options

- Frenotomy
 - No anesthetic needed
 - No suturing
- Frenectomy
 - Local or general anesthetic used
 - Sutures placed
- Z-plasty
 - More complex
 - Sutures placed

Clinical Reasons for a frenotomy

- Painful attachment at breast
- Nipple trauma / nipple breakdown
- Failure to thrive / poor milk transfer

Frenotomy technique

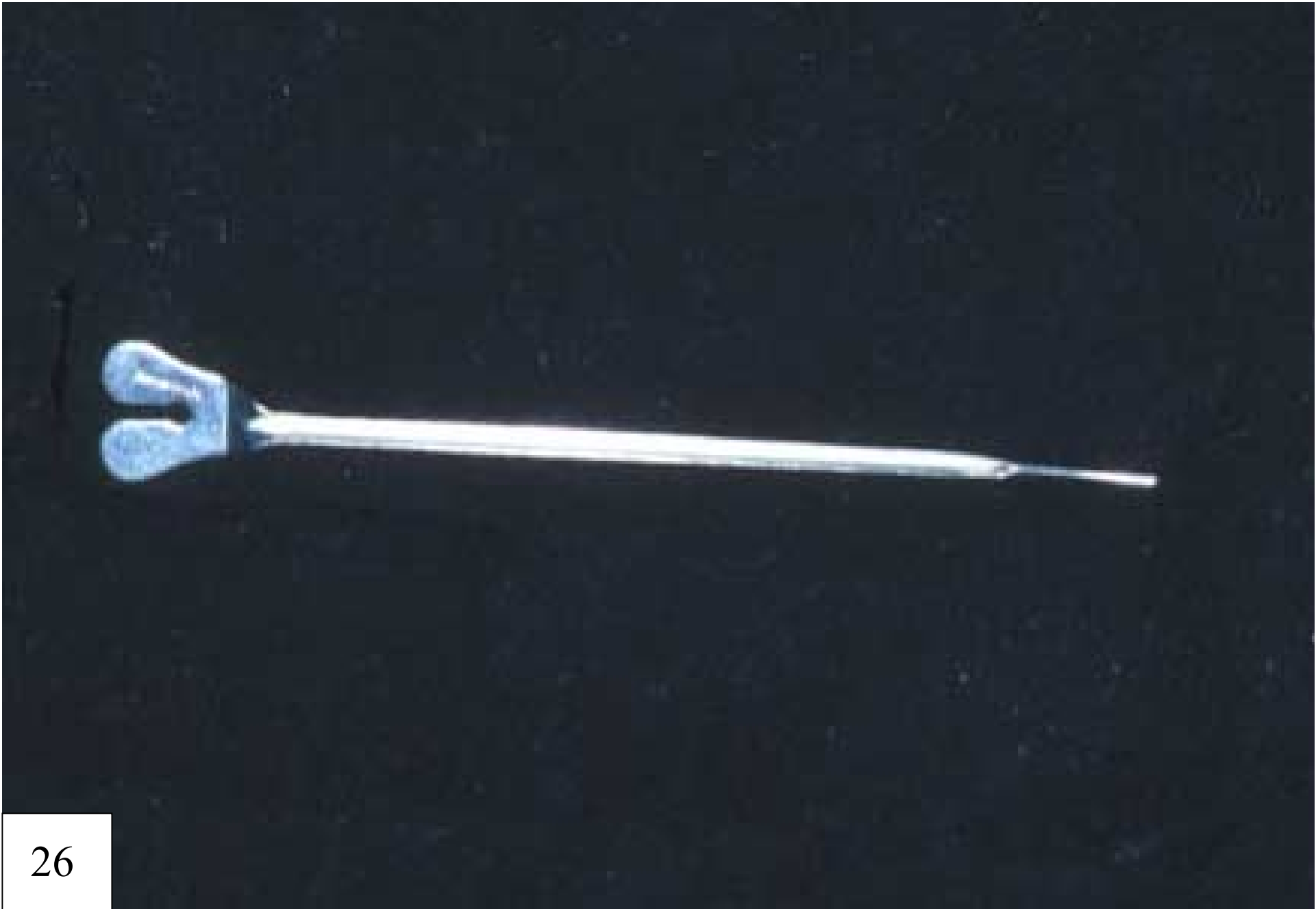
- Parent holds and stabilizes head
- Stabilize and elevate tongue
- Clip center of frenum (~1 cm)
 - Frenum is poorly vascularized
 - Frenum is poorly innervated
- Infant can breastfeed immediately



EXAMPLE ONLY of tongue ready for frenotomy



EXAMPLE ONLY - approximate area of “snip” for frenotomy.



26

“Tongue lifter” - used to be quite common in birthing surgical packs.

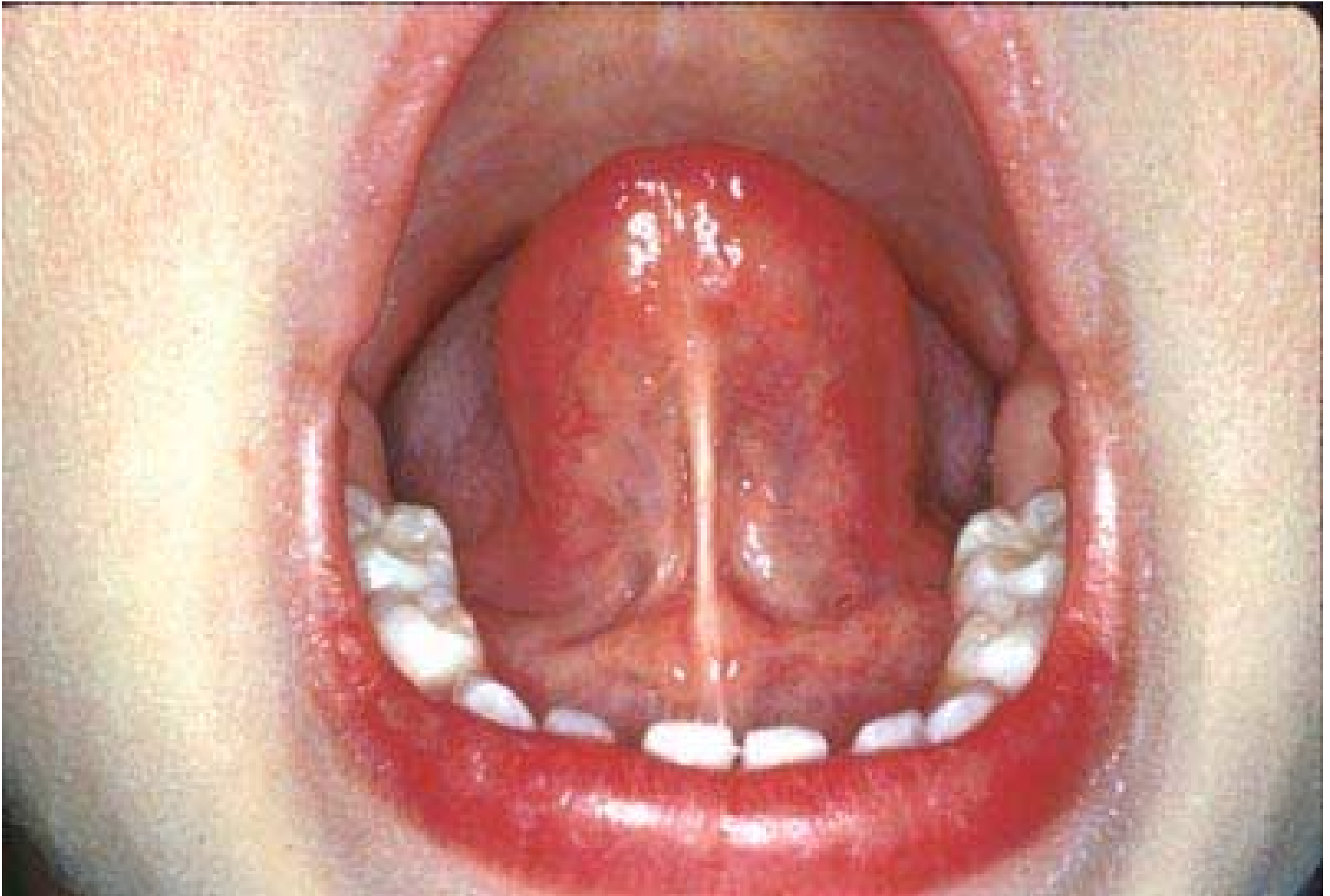


8 week old infant with tight
frenum - 7 oz under birth weight.
(Barbara Wilson-Clay)



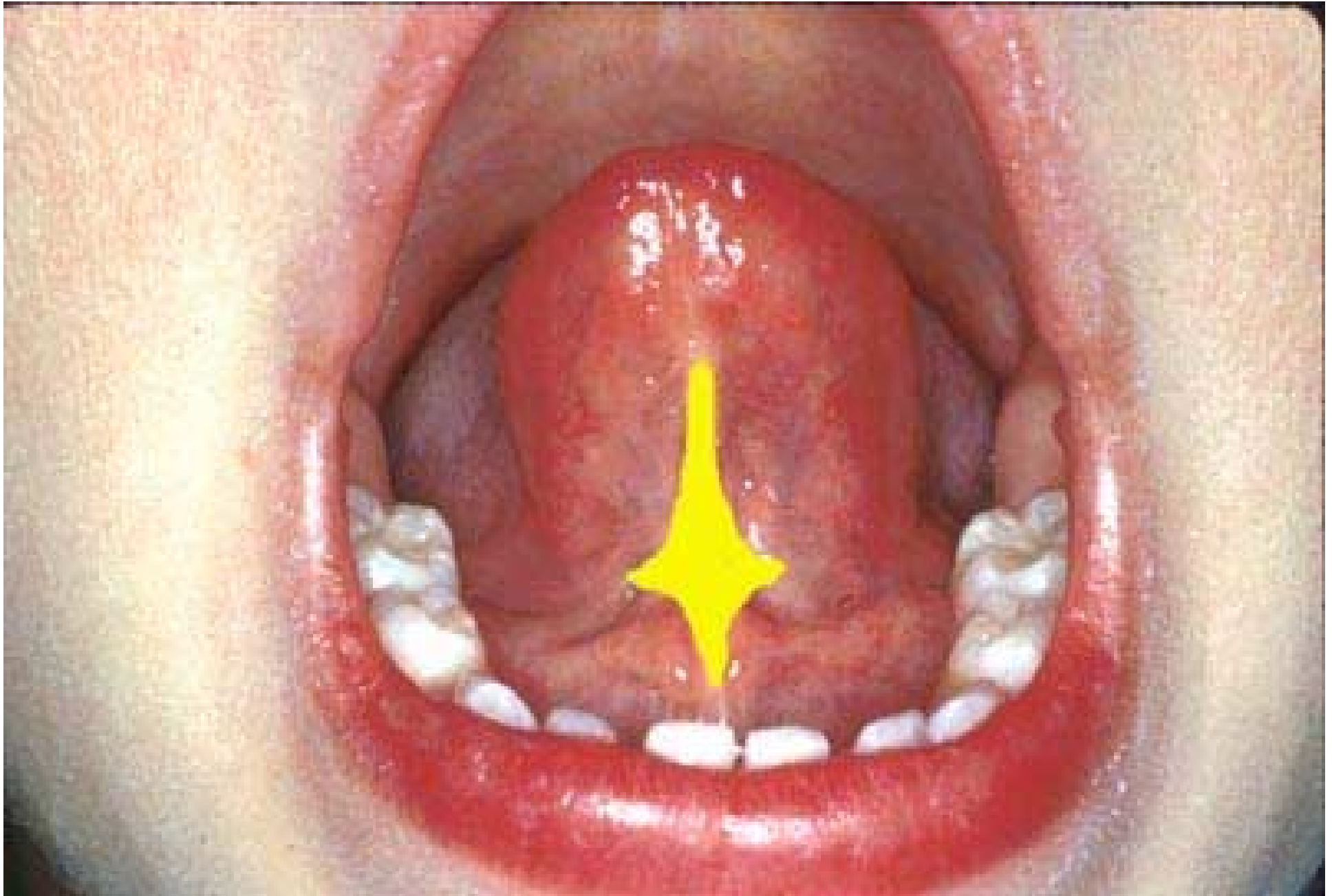
28 Infant now 10 weeks old - starting to thrive. (Barbara Wilson-Clay)

Frenectomy technique

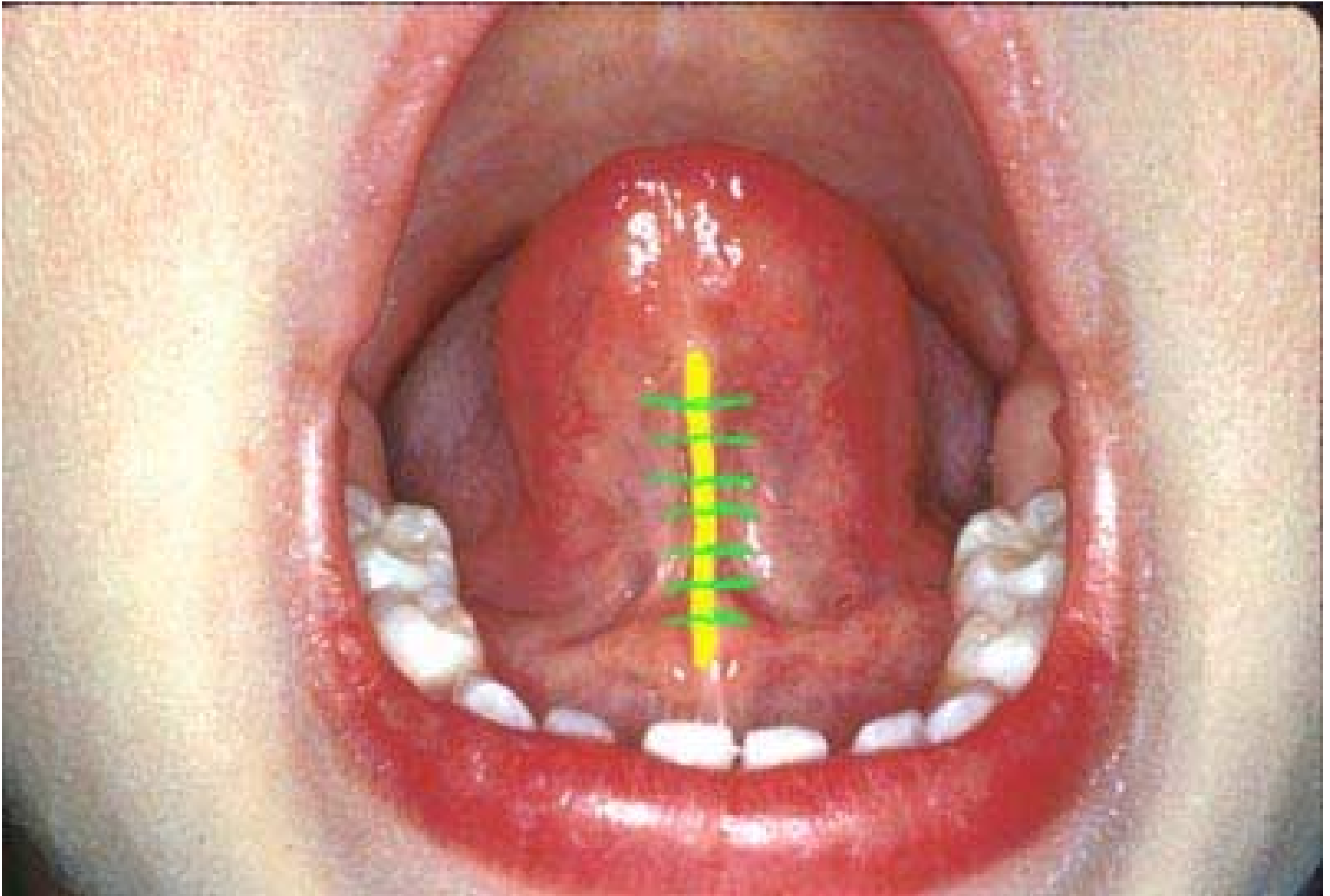


30

EXAMPLE ONLY of tongue ready for frenectomy



31 **EXAMPLE ONLY** - area of tongue that would be incised (yellow).

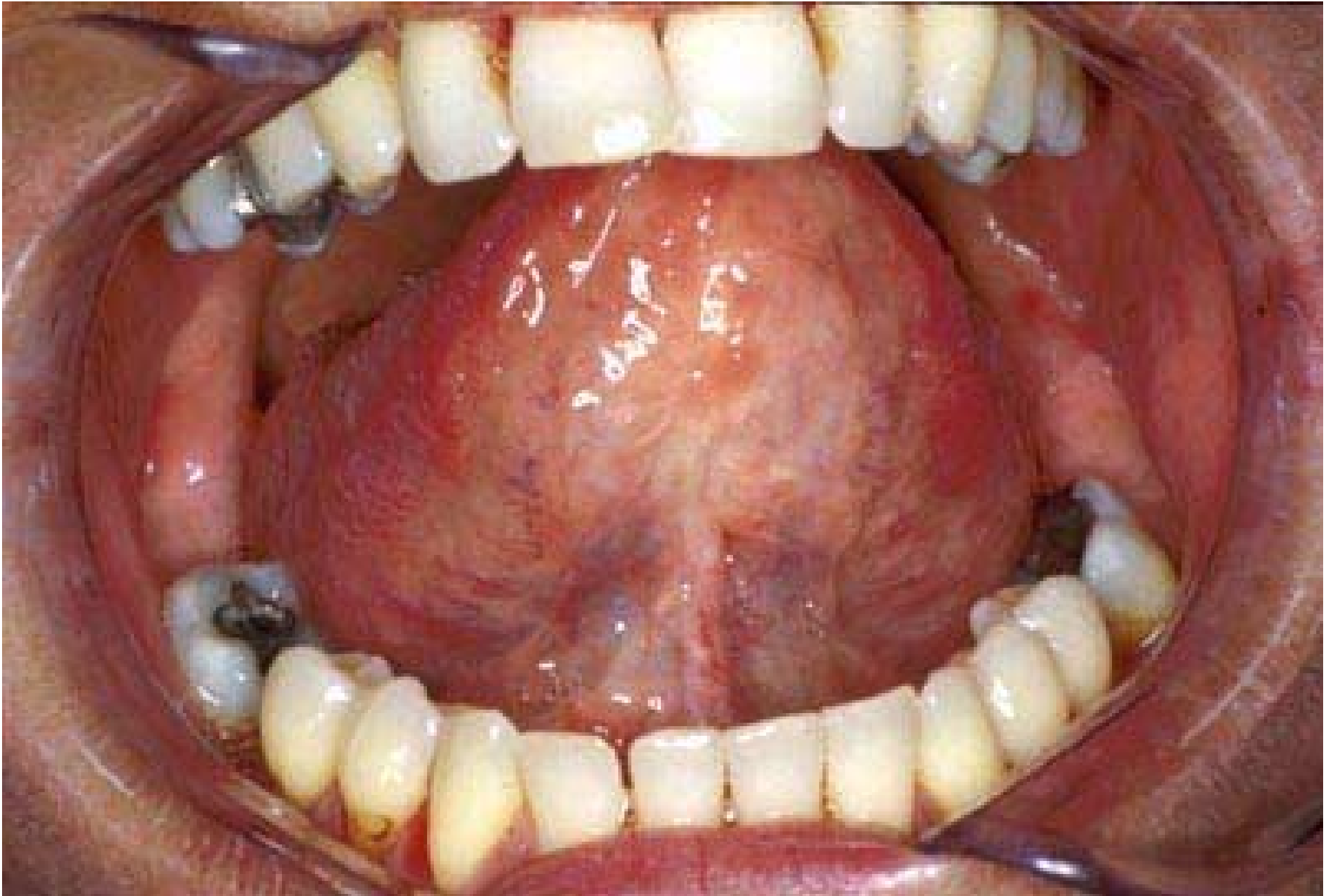


32

EXAMPLE ONLY - area of sutures in green.

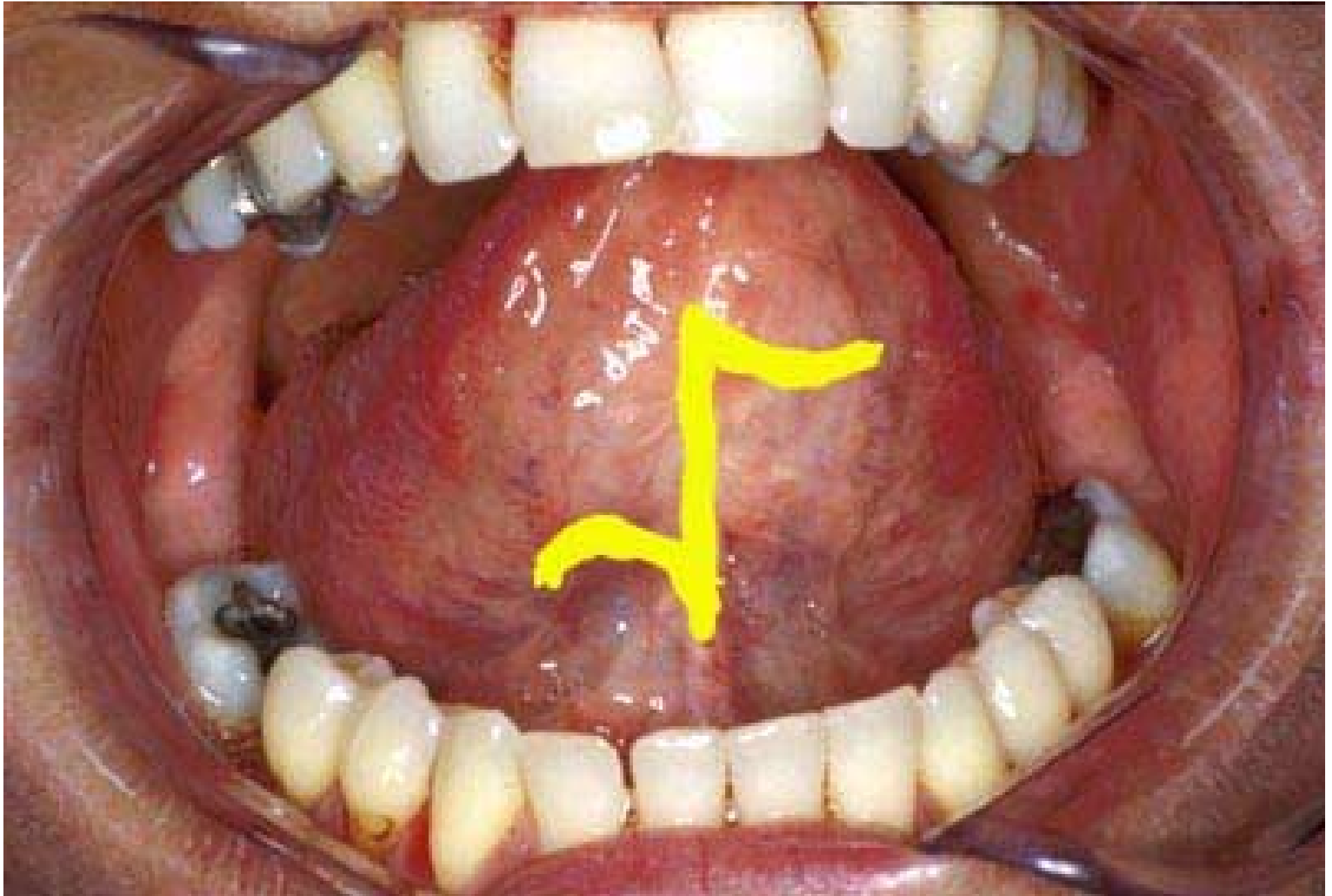
Z-plasty surgery

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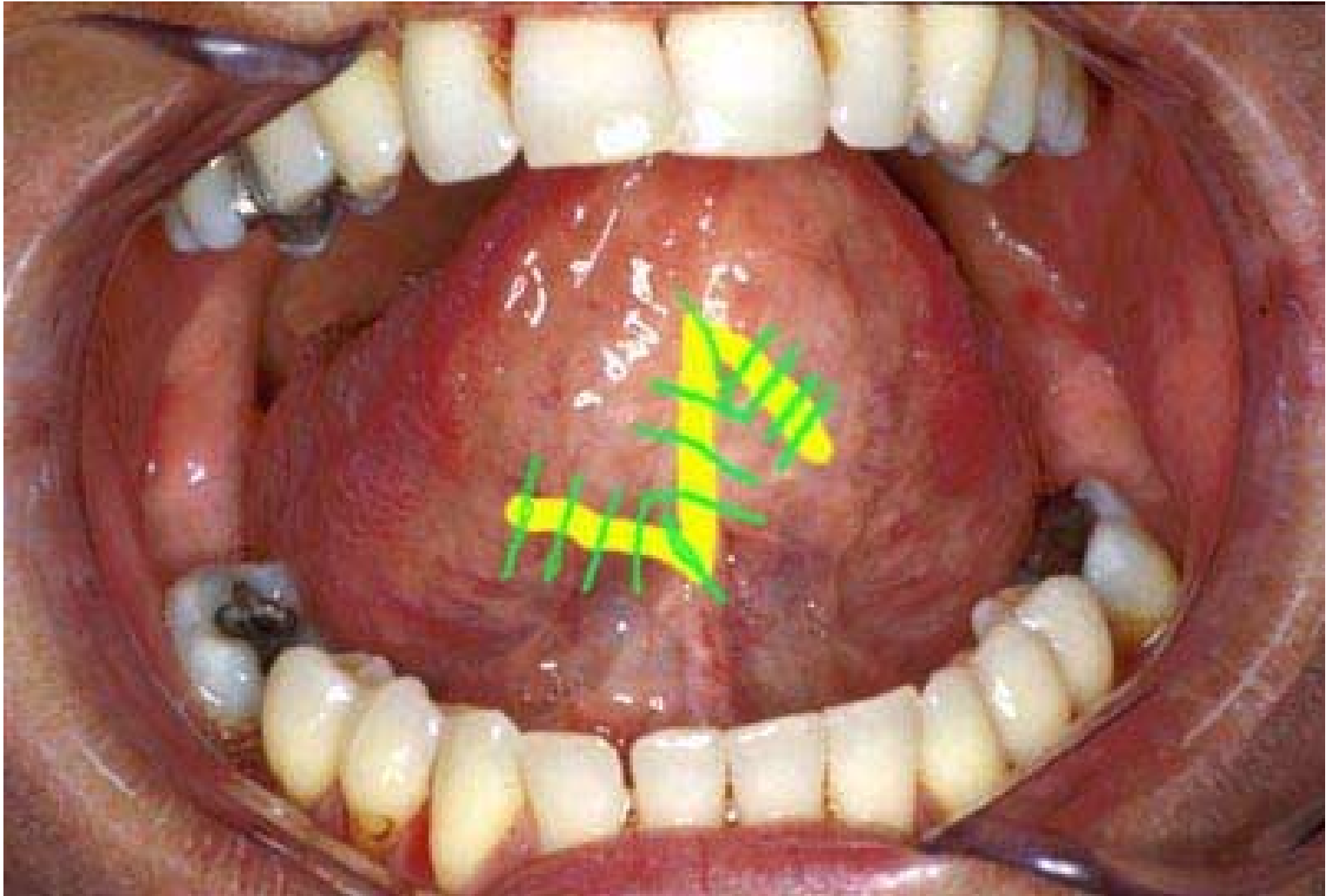
34

EXAMPLE ONLY of tongue ready for Z-plasty.



35

EXAMPLE ONLY - area of incision for Z-plasty



36 **EXAMPLE ONLY** - placement of Z-plasty sutures.

Z-plasty case

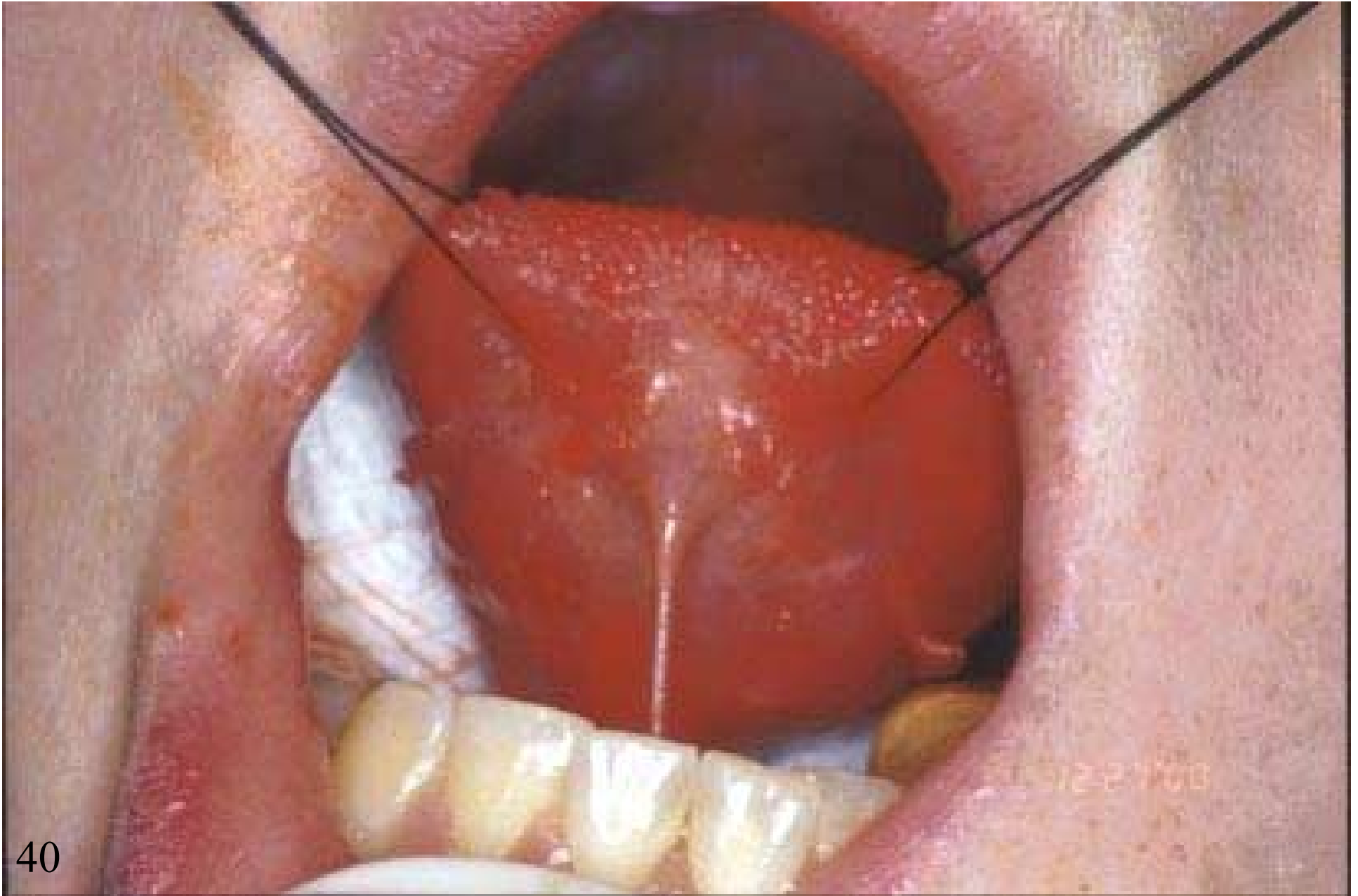
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Age 22 - Tongue fully extended. Unable to breastfeed as newborn.

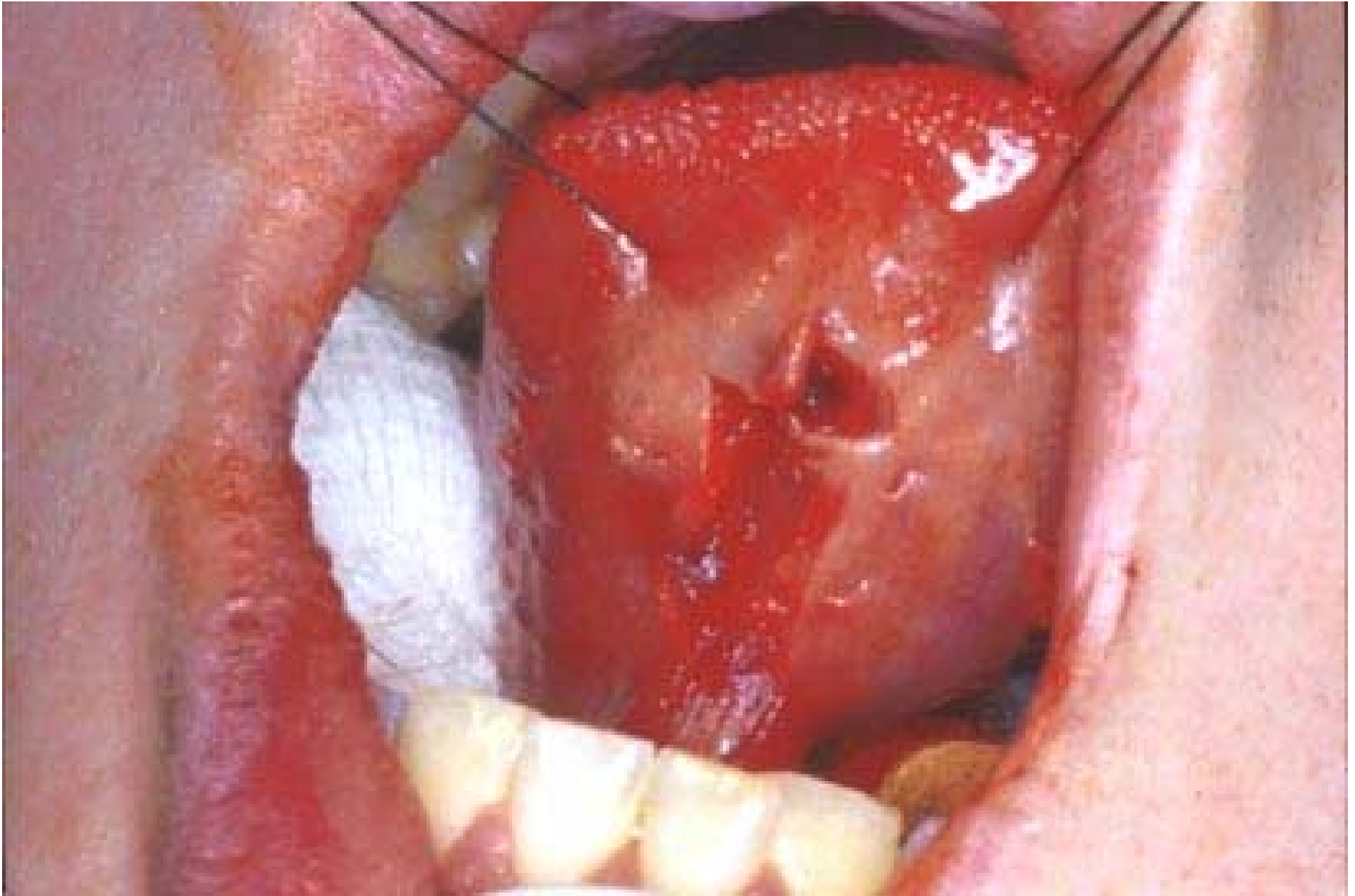


39 Tongue fully extended - curves down - tip is blunted.



40

Sutures elevate tongue - patient could not elevate tongue very high.



41 Multiple small Z-Plasty incisions performed by oral surgeon.



42

Sutures being placed.



43 10 day healing - can elevate tongue much higher now.

Consequences of not treating tight frenums.

Case reports:

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Case 1



Case 1: Age 4 (1992)



47 Age 4 - Tight frenum - note pull on inside of lower jaw.

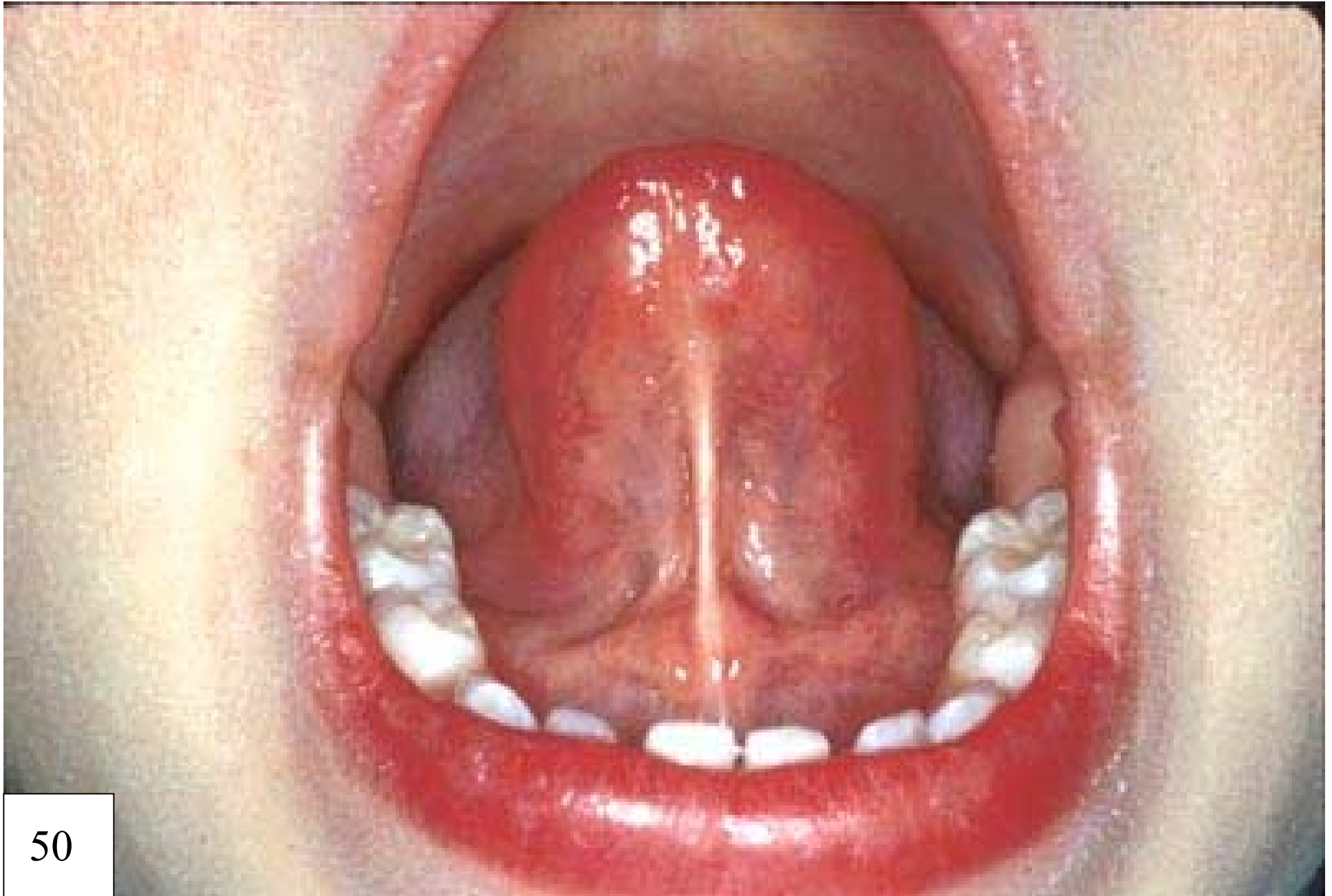


48 Age 4 - open bite due to thrust created by being tongue-tied.



49

Tongue thrust due to being tongue-tied.



50

Age 5 - Post frenectomy - could need 2nd procedure when older.



51 Same patient has thick / high upper labial frenum.



52

Age 8 1/2 - Note diastema (gap) between teeth due to thick frenum.



53 Age 8. Frenectomy performed on upper labial frenum



54 Age 9. Note diastema and open bite closing just from doing frenectomies and speech therapy.



55 Age 10. Diastema closed - no orthodontics to this point.



Pretty smile on same patient
at age 10.

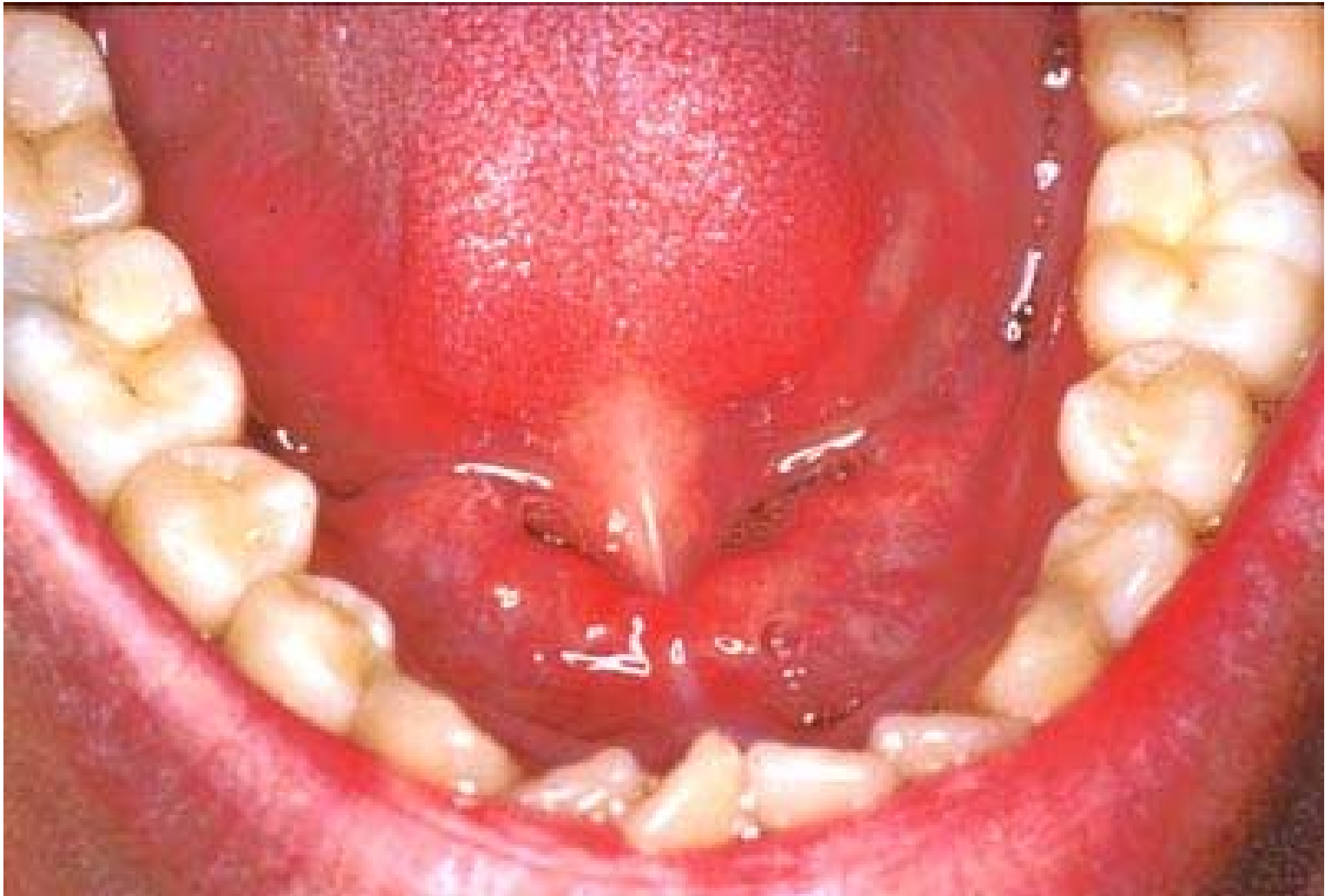


57

Guiding teeth into proper alignment with orthodontics.

Case 2

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59 Patient in early 30s. He is severely tongue-tied.



60 Tongue fully extended - note groove on top of tongue.



61 Open bite caused by tongue thrust due to being tongue-tied.



62

Tongue thrust due to tongue-tie - note bubbles coming through teeth.



63

Force of tongue thrust has actually rocked lower tooth loose.



Tooth was so loose it had to be removed. Other 3 lower front teeth were removed a couple of years later by another dentist. All 4 teeth were lost due to a tight frenum (along with poor hygiene).

Case 3



Patient - Age 40. She had significant gastric distress, bloating and gas build up.

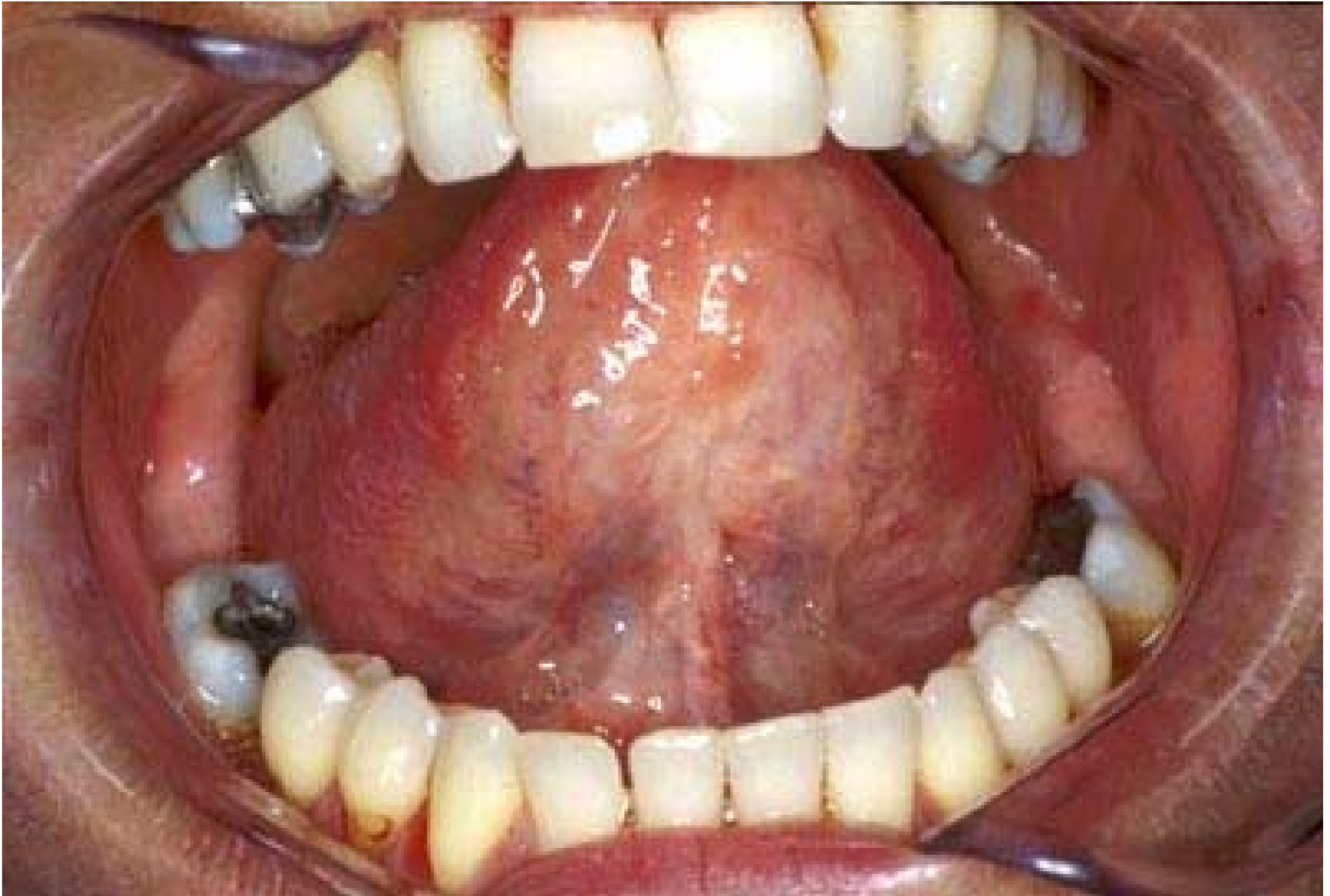


67

She was significantly tongue-tied.



68 Open bite due to tongue thrust caused by tight frenum.



69 Post Z-Plasty healing. Note how high she can now elevate tongue.



She can now extend tongue out quite far. She is now off all medications that she had been on all her life for gastric distress, etc.

Why? She can now chew better and does not swallow air like she used to.

Case 4



72 Tight frenum on patient in 60s with severe sleep apnea.



73 Demonstrates tight frenum and large tongue (macroglossia).



74

Subtle open bite due to tongue thrust.



75 Tongue thrust demonstrates why subtle open bite was present.



76 Patient had back of throat removed (UPPP) for apnea treatment.



77

Patient **MUST** sleep with CPAP every night for his sleep apnea

Case 5

Slides for this case courtesy
of Catherine Watson Genna

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79 Breastfed girl demonstrating nice smile and arch form.



80 Demonstrating she is not tongue-tied by elevating tongue.



81 Demonstrating nice “U” shaped dental arch and normal hard palate



82

Breastfed brother showing very crowded teeth.



83

Very high palate, narrow arch and crowded dentition. He is also a snorer and bed wetter



84

Reason for problems - he is tongue-tied!



- 85 He had frenectomy and upper arch was expanded like this.
Resolved his bed wetting, snoring and malocclusion.

Labial frenums

Case 6



88

Age 9 - Diastema (gap) due to thick high frenum

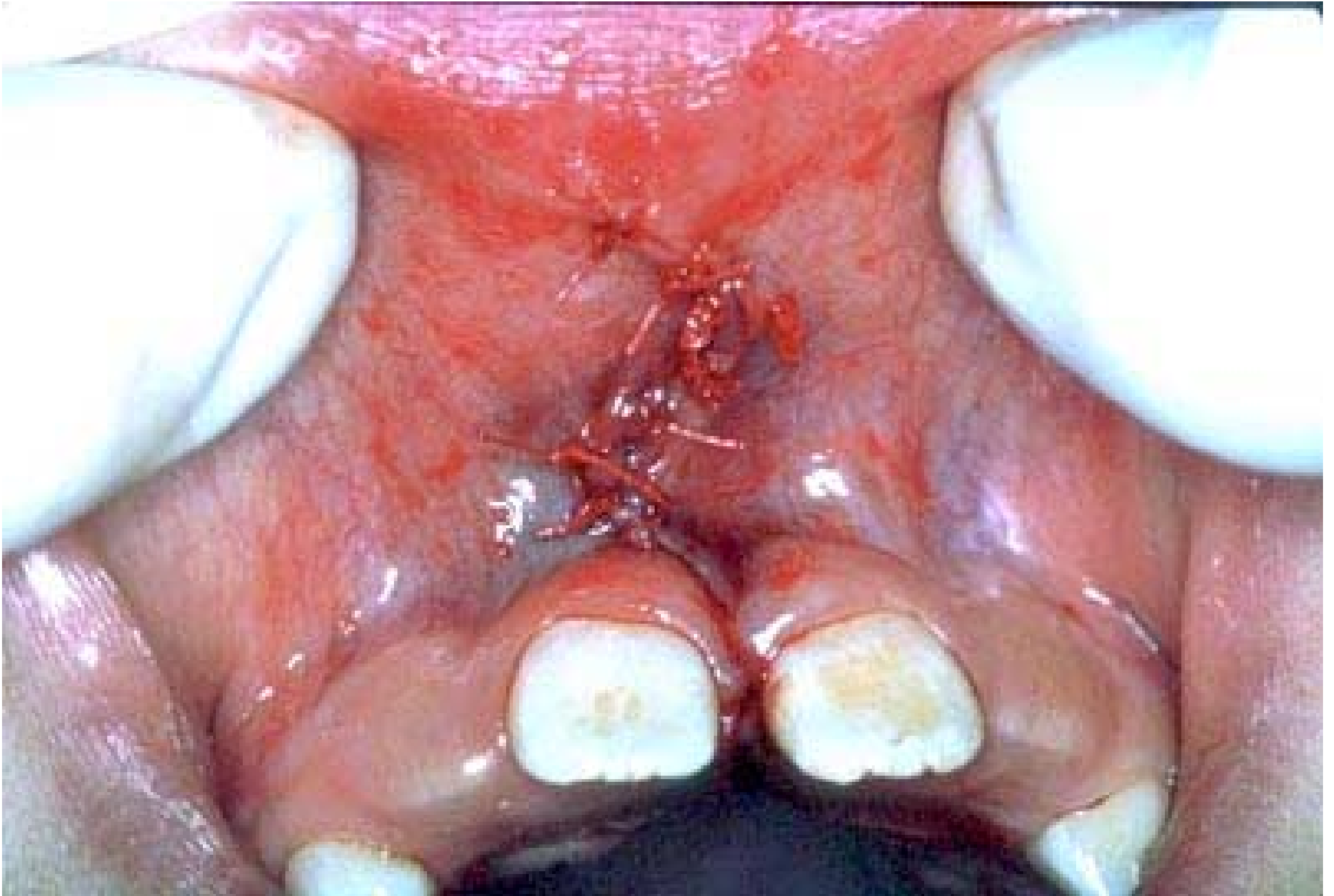


89 1 year post surgery - note how diastema is closing on its own.

Case 7



91 Pre-surgery on maxillary frenum that has caused diastema.



92

Frenectomy and sutures placed by oral surgeon.



93 7 week healing - note diastema is starting to close already.

Case 8

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95
Thick frenum causing diastema - probably interfered with breastfeeding.



96

Different view of same thick frenum.

Frenums on elderly

Lingual and labial frenums
rarely go away by themselves!



98 Frenum and resultant diastema on 55 year old lady.



99

Diastema on 70 year old.



100

Same 70 year old patient. When is he going to outgrow his frenum?

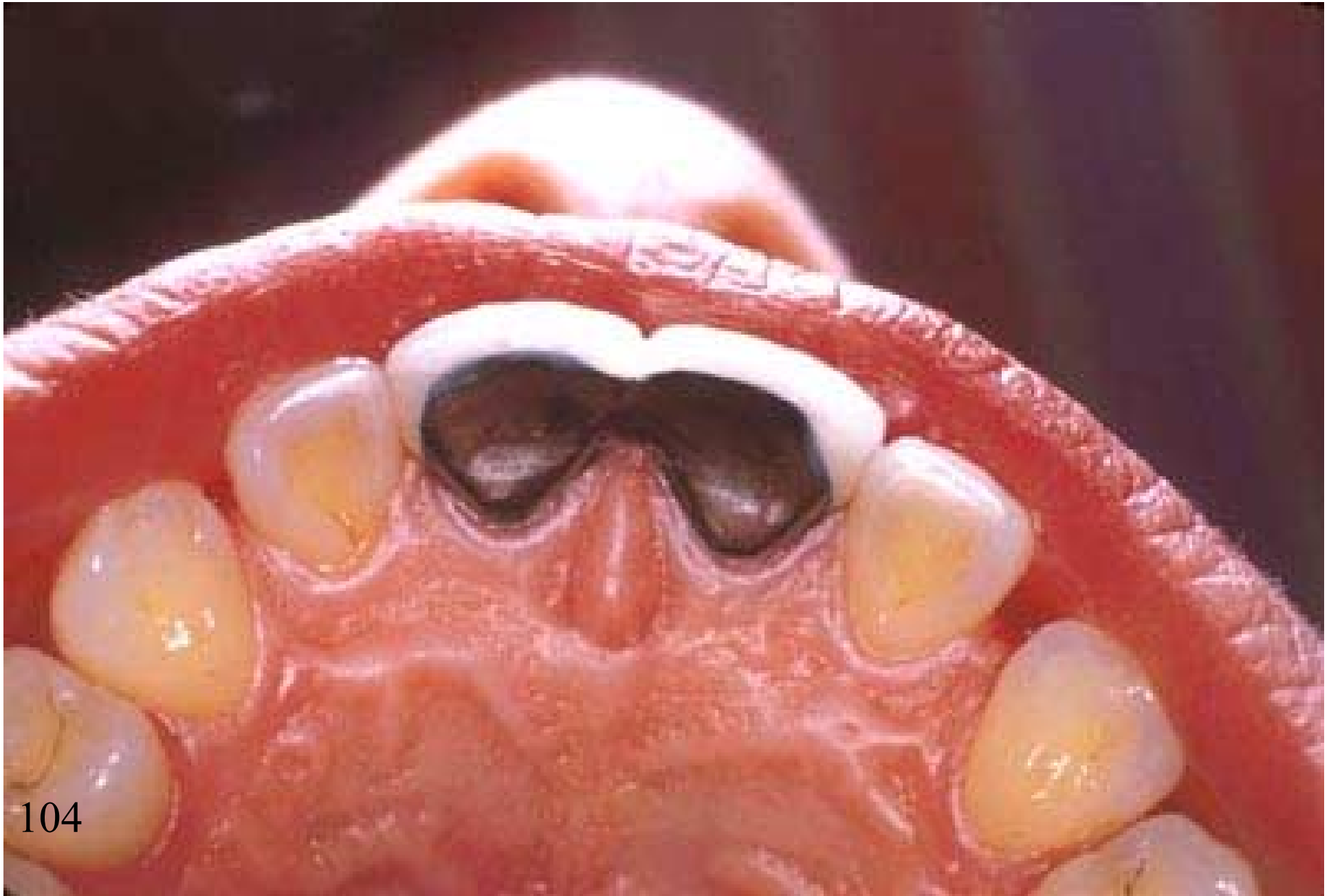


101 Frenum and diastema on an 86 year old gentleman.

Additional expenses caused by tight labial frenums



103 Two crowns had to be placed to close and hold diastema closed.



104

Crowns had to be soldered on inside to keep teeth from separating.



105 Bracket bonded on inside to maintain closure.



106

Gap due to frenum - before bonding.



107

Bonding placed to close space

Frenum Recommendations

- Include the significance of frenums and the importance of breastfeeding in the curriculum of health care schools.
- Train all OBs and pediatricians how to perform the surgeries.
- Refer out if not comfortable doing the surgeries.
- Anyone who can do a circumcision should be able to do a frenotomy.

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