

MARCH 23, 2014

## RETHINKING TONGUE TIE ANATOMY: ANTERIOR VS POSTERIOR IS IRRELEVANT

by Bobby Ghaheri

There is no doubt that tongue-tied children have a higher propensity for breastfeeding difficulty. In trying to understand how best to treat children with tongue tie, practitioners have developed a classification system to describe tongue tie.

Most practitioners use a classification where the tongue tie is given a grade of 1, 2, 3, or 4. Classically, class 1 and 2 are thought of as **anterior**, whereas class 3 and 4 are **posterior**. Unlike cancer grading, where stage 1 is minimal disease and stage 4 is severe disease, that distinction does not apply for grading the severity of tongue ties. Instead, the tongue tie classification system is merely a description of where the tie attaches to the tongue. I have seen class 4 babies with severe breastfeeding problems and class 1 babies who feed normally, and vice versa. The problem with the word "posterior" is that those unfamiliar with this classification may erroneously think that the tongue tie is in the back of the throat, back by the tonsils. Better descriptive terms would be submucosal or hidden tongue ties, but we are unfortunately stuck with the term posterior.



**Class 1 Tongue Tie.** This is the classic heart-shaped tongue that most doctors feel is the only real tongue tie. The tie inserts into the tip of the tongue.



**Class 2 Tongue Tie.** Considered to be an anterior tie, this tie inserts just behind the tip of the tongue. We don't see a heart-shaped tongue, but the tie is still clearly seen.



**Class 3 Tongue Tie.** Classified as a posterior TT, the distinction between this and a class 4 TT is that the class 3 still has a thin membrane present.



**Class 4 Tongue Tie. No thin membrane is present, so this type of tie is the most commonly missed. The front and sides elevate, but the mid-tongue cannot.**

Unfortunately, what I have encountered when most practitioners treat tongue tie is that the procedure is done incompletely. This post will describe how to completely treat a tongue tie to completely release any tension on the tongue.

After treating over a thousand babies with breastfeeding problems, it has become clear to me that our previous understanding of the anatomy of tongue tie is inaccurate. In my training, we only were taught to release the thin membrane of a tongue tie if restriction was noted (this was in the setting of speech problems, not breastfeeding). Most practitioners who haven't done a significant number of tongue tie procedures also tend to just snip this front membrane. Parents are impressed because of the lack of bleeding, and the practitioners willingly do it because it carries no risk. They don't usually acknowledge the possibility that a class 3 or 4 tongue tie exists because the thin membrane that is present in class 1 or 2 tongue ties is minimal in size or absent altogether. I contend that the presence or absence of a thin membrane is irrelevant if the baby is having problems with breastfeeding. Why? It goes back to the mechanics of breastfeeding. A previous post demonstrated that the critical motion in breastfeeding is [elevation of the tongue](#).

**In my experience, every anterior tongue tie has a posterior tongue tie behind it.** Reworded, every tongue tie that affects breastfeeding is a posterior tongue tie. Some of those also have an anterior thin membrane, but there is always a posterior component. I like to use a sailboat analogy to help describe tongue tie.



**Imagine the sail as a class 1 or 2 tongue tie. That sail is visible. But behind that sail, there is a mast that also needs to be addressed.**



**In this example, the sail is down. The only thing visible is the mast. The absence of that sail doesn't affect the presence of the mast.**

This concept must be understood if we are to understand how to effectively treat tongue tie in the setting of breastfeeding. Whereas treating just the sail (the anterior tie) may be sufficient in treating older children with speech problems, treating just the anterior tie is insufficient in helping the baby with breastfeeding problems. The ultrasound data show that the front of the tongue must advance slightly and then elevate to cup the breast against the palate. This motion may be helped by snipping an anterior tie. But the ultrasound

data also show that the mid-tongue **must** be fully mobile to elevate towards the palate. If the tongue is only released up front (the sail is cut) and the posterior component is left behind (the mast), then the mid-tongue won't elevate and the latch will still be problematic. This analogy also applies to the baby with a posterior tie (where only the mast is the problem). In these babies, the front of the tongue may elevate just fine, but the posterior restriction won't allow the mid-tongue to elevate, again affecting the latch.



**A classic diamond-shaped wound seen in an appropriate release.**

It is absolutely essential that the practitioner gets through the posterior component of the tongue tie for the procedure to be effective. How can the practitioner know if they've gone far enough? The tongue tie that is fully released has a diamond-shaped wound. **If there is no diamond, then the release is incomplete.** The alternative way to know for sure that no further tie exists is to release the tie until muscle is seen. This is why I contend that the tool used to do the frenotomy is irrelevant: whether it's scissors or a laser, as long as the diamond is visible, then I know that the tongue has been fully released. This technique should be everyone's goal.