

# The “dimple swallow” sign for branchial cleft anomalies

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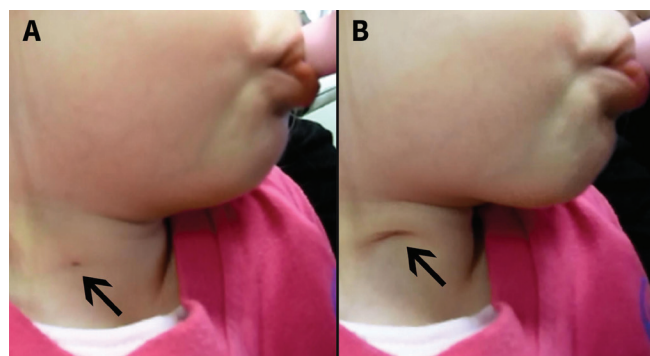
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**A** three-year-old girl presented with a small opening at the anterior border of the right sternocleidomastoid muscle that had been there since birth (Figure 1A). On swallowing, the opening elevated, forming a cutaneous depression similar to a dimple (Figure 1B; a video [Appendix 1] is available at [www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.180665/-/DC1](http://www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.180665/-/DC1)). Additionally, there was recurrent mucoid discharge from the opening. Based on the clinical findings, we diagnosed a second branchial cleft fistula. A fistulogram procedure and surgical excision of the lesion were planned, but the patient was lost to follow-up.

Congenital lesions account for more than half of excised cervical masses in children; 20% of them are branchial cleft anomalies, including cysts, sinuses and fistulas.<sup>1</sup> Second branchial cleft lesions account for 90%–95% of all branchial cleft anomalies.<sup>1</sup> In most cases, the tract ends blindly, leading to the formation of a branchial sinus. Complete second branchial fistula (i.e., in which the external opening of the second branchial cleft fistula is located at the anterior border of the sternocleidomastoid muscle and the internal opening is located in the tonsillar fossa) is unusual.<sup>2</sup>

The diagnosis of branchial cleft anomalies is based on patient history, clinical examination and imaging. Computed tomography, ultrasonography and a fistulogram procedure are helpful in defining the extent of the tract.<sup>3</sup> The definitive treatment for a branchial cleft anomaly is complete surgical excision.<sup>4</sup> Occasionally, first and second branchial cleft anomalies may be signs of branchiootorenal syndrome.<sup>5</sup>

Although a “dimple swallow” sign can be helpful, suggesting the presence of a branchial cleft anomaly (either sinus or fistula), its major clinical value is that it forewarns the surgeon about potential difficulties of the surgical procedure. It implies a deep connection of the lesion, meaning that the tract is either a complete fistula or a deep sinus tethered to the structures that elevate on swallowing.<sup>4</sup> In both cases, the surgical procedure is more challenging; however, the surgeon must always be prepared for a complete fistula dissection.



**Figure 1:** (A) A three-year-old girl with a small cutaneous opening at the anterior border of the right sternocleidomastoid muscle. (B) On swallowing, the opening elevated, forming a cutaneous depression similar to a dimple.

## References

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A video showing the “dimple swallow” sign is available in Appendix 1, at [www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.180665/-/DC1](http://www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.180665/-/DC1)