

1-2020

## Utility of point of care ultrasound for identifying dental abscesses in emergency department patients presenting with dental pain

Matthew Cervantes

*Thomas Jefferson University, matthew.cervantes@jefferson.edu*

Kelly Goodsell, MD

*Thomas Jefferson University, Kelly.Goodsell@jefferson.edu*

Arthur Au, MD

*Thomas Jefferson University, Arthur.Au@jefferson.edu*Follow this and additional works at: [https://jdc.jefferson.edu/si\\_ctr\\_2022\\_phase1](https://jdc.jefferson.edu/si_ctr_2022_phase1) Part of the [Dentistry Commons](#), [Emergency Medicine Commons](#), and the [Translational Medical Research Commons](#)[Let us know how access to this document benefits you](#)

### Recommended Citation

Cervantes, Matthew; Goodsell, MD, Kelly; and Au, MD, Arthur, "Utility of point of care ultrasound for identifying dental abscesses in emergency department patients presenting with dental pain" (2020). *Phase 1*. Paper 88.

[https://jdc.jefferson.edu/si\\_ctr\\_2022\\_phase1/88](https://jdc.jefferson.edu/si_ctr_2022_phase1/88)

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Phase 1 by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: [JeffersonDigitalCommons@jefferson.edu](mailto:JeffersonDigitalCommons@jefferson.edu).

Utility of point of care ultrasound for identifying dental abscesses in emergency department patients presenting with dental pain

Matthew Cervantes, Dr. Kelly Goodsell MD and Dr. Arthur Au MD\*.

(\*) indicates primary project advisor

**Introduction:** Computed tomography (CT) is the current gold standard for diagnosing dental abscesses in the Emergency Department (ED). There are limitations to using CT, including high cost, radiation exposure, and lengthy time to diagnosis. Point of Care Ultrasound (POCUS) is an alternative imaging modality that does not have these limitations, and is already used to diagnose other soft tissue abscesses. The efficacy of POCUS for diagnosing suspected dental abscesses has never been investigated. The purpose of this project is to compare the utility of POCUS to CT in diagnosing suspected dental abscesses in the ED.

**Methods:** A convenience sample of patients presenting to the ED with dental pain were enrolled into a prospective observational cohort study design, when trained providers were available. Patients were eligible for enrollment after a CT was ordered. The ability of POCUS to identify dental abscesses was compared to CT in each patient. Data was collected using REDCap, and analyzed testing for non-inferiority.

**Results:** Preliminary results indicate that POCUS is non-inferior to CT at diagnosing dental abscesses ( $p=0.002$ ,  $n=31$ ). Additionally, the time to diagnosis is significantly shorter for POCUS compared to CT ( $p<0.0001$ ).

**Conclusions:** These results suggest that POCUS may be an adequate tool for evaluating suspected dental abscesses in the ED. Due to decreased time to diagnosis, patients with suspected dental abscesses receiving POCUS instead of CT as an initial diagnostic imaging study may receive treatment and disposition significantly earlier. This could potentially lead to improved outcomes in patients.