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## REGULAR FEATURES

### Ujuzi (Practical Pearl/*Perle Pratique*)



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Ujuzi means skills in Swahili and is intended to be a regular feature for colleagues to share practical interventions, innovations and novelties that have proved useful in the management of patients in the prehospital environment or Emergency Centre. You can let Ujuzi know about your practical ideas by emailing [practicalpearl@afjem.com](mailto:practicalpearl@afjem.com).

#### Diagnosing mandibular fractures using a tongue depressor

In Ghana, road traffic accidents (RTAs) account for approximately 80% of mandible injuries.<sup>1–3</sup> RTAs have become a public health concern worldwide, especially in low to middle income countries (LMICs), such as Ghana. Growth in motor vehicle numbers, poor enforcement of traffic safety regulations, inadequacy of public health infrastructure and poor access to health services are some of the reasons why RTAs continue to contribute to the high burden of injury in LMICs.<sup>4</sup> Although computed tomography (CT) remains the imaging method of choice to diagnose mandible fractures, X-ray is more widely used and has a sensitivity of around 91%.<sup>5</sup> However, X-rays are not accessible in many LMIC settings and referral for mandible imaging is even less feasible in these circumstances. This pearl describes how an inexpensive tongue depressor can be employed in the evaluation of mandibular injuries in low resourced, LMIC settings.

The tongue depressor test can be performed as part of the physical examination to identify a mandibular fracture in a patient with a maxillo-facial injury. The test is based on the premise that a patient without a fracture can apply enough force when biting down on a tongue depressor to break it when twisted, whilst one with a fracture cannot. This test appears to have 95% sensitivity, 68% specificity and 92% negative predictive value for mandibular fractures.<sup>6</sup> This means that we can use this test with reasonable confidence to rule out a mandible

fracture where the suspicion is low, but that it is less useful to rule in fractures if negative. Anyone with a clinical suspicion for a mandible fracture who fails this test should have an X-ray performed.

Procedure (Fig. 1):

1. The patient is asked to bite down on the tongue depressor between the molars on the suspected fractured side (the right side is demonstrated in Fig. 1).
2. The examiner then twists the tongue depressor until it breaks.
3. Inability to break the tongue depressor suggests mandibular fracture on that side.
4. The above procedure should then be repeated on the opposite side.

Advantages: It is a simple, inexpensive way of ruling out the presence of a mandibular fracture when clinically suspected and might reduce radiation exposure if used as described above even where imaging is available.

Pitfall: the test cannot be used to rule in mandible fracture, or applied in an unconscious or uncooperative patient.

#### Conflict of interest

The authors declare no conflict of interest.

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**Figure 1** Demonstration by author of tongue depressor bite test.

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