Apart from inflicting oral pain and mental distress, what else does a bit do to a horse?

Dr. Cook observes that a horse at liberty runs with teeth clenched, lips sealed and jaw immobile. From this and other evidence, he concludes that there is no air in the mouth; that the front half of the tongue clings to the roof of the mouth (hard palate); and that the root of the tongue clings to the soft palate. It is this suction-cup effect in the throat, he surmises, that holds down the soft palate - enabling the nose-breathing horse to breathe at the gallop.

A bit opens the mouth; breaks the lip seal; destroys the vacuum; and triggers tongue and jaw movement. Consequently, the soft palate can float up and throttle the horse. This, he believes, is the most common cause of a horse "swallowing its tongue" and choking, i.e., asphyxiating from soft palate instability.

Asphyxia, as in man, causes waterlogging of the lungs (pulmonary edema). One sign of this in the horse is flooding of the lungs' airways with heavily blood-stained edema fluid so-called 'bleeding.' Other signs of oxygen starvation and chest pain include premature fatigue, poor performance, exhaustion, stumbling, breakdowns, falls, fractures and sudden death. Supporting evidence is provided in his 2014 publication, which describes how the explanation can be further tested.

Read more by clicking here.