

## COMMENTARY

### Comment on “A Sample of a Mytho-pathologic Study: The Story of Rostam and Esfandiyar”

Dear Dr. Naser-Moghadasi,

I really appreciate your sound and interesting manuscript on the mytho-pathologic study of the Shahnameh story.<sup>1</sup> It is not only interesting, but also scientifically valuable trying to conform a myth to the scientific structure. I agree to the majority of your deductions; however, I need to strongly address one, which I found anatomically and neurosurgically unacceptable.

The idea that a sharp object may penetrate the orbit and get to the brain is not an obsolete phenomenon. In everyday neurotrauma practice, we see real patients suffering sharp trauma to the eye, traversing to the intracranial space. More interestingly and historically, is the issue of psychosurgery. The story of Phineas Gage,<sup>2,3</sup> the poor construction foreman, who developed a penetrating injury to the frontal area led to the large series of observations and interventions which together paved the way for the evolution of several techniques of damaging the frontal areas to treat severe psychiatric disorders. Of major interest, is the invention of a trans-orbital leukotome,<sup>4</sup> which was used to sever the brain in an outpatient setting. Although such practice gradually disappeared due to misuse by its founder, it is evident that such an injury was at least intended to cause neither rapid death of the subject, nor any speech problem.

Anatomically, the Broca area, is located on the frontal operculum on the lateral surface of the brain, very far from the orbit. No single trajectory by however long a sharp instrument can easily touch or damage this

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1- Naser Moghadasi, 2014: 191-4.

2- Ratiu *et al.*, 2004: e21.

3- Rashid *et al.*, 2010: 163-6.

4- Faria 2013: 49.



area. One possible explanation is to cause a large intracerebral hematoma by the instrument in the left frontal lobe, which may compress and affect the speech area. In such a case, this large hematoma would lead to a herniation and drowsiness of the victim before causing any specific speech problem.

Although I object to your reasoning about the speech issue in the story, I strongly agree with you that not the trauma itself, but perhaps the poisonous intoxication has been the final cause of death. I believe that although it lacks enough scientific basis, the myth has tried to provide its best available solution to build up the story. It is admiring.

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