Reply to letter to the editor “The relationship between head injury and facial trauma: a case–control study”

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Dear Editor,

Thank you for having the opportunity to reply to these interesting letters, “The relationship between head injury and facial trauma: a case–control study.”

I think it is incorrect to say that the methods we have used for neurosurgical evaluation of the patients are not clear (clinical diagnosis, plain radiography, or CT scan). Since in the “Material and methods” of our article, we indicated that patients with minor facial trauma whose history and clinical examination raised any suspicion of a head injury and all patients sustaining a major facial trauma were immediately evaluated by a neurosurgeon. We also indicated that “normally in our trauma center, any trauma patient suspected of having a head injury should have a head CT obtained. Therefore, all of the neurological data of our study are based on information obtained from clinical and CT examinations performed by a neurosurgeon.” I therefore disagree that the definition of head injury and the detailed cause of craniofacial injuries (for example, type of the sport injury or violence) are not clear.

It is further suggested that it is not clear as to how many patients with any systemic injuries were included or excluded. Reviewing the literature on craniofacial trauma shows that no standardized and universally accepted classification system for the etiologies of trauma and the pattern of facial and head injuries has been used in prior studies. For example, some investigators have simply classified facial bone fractures as mandibular, maxillary, or zygomatic, while other researchers have used a very complex classification system. In the same way, a variety of definitions and classifications for head

injuries and the etiologies of trauma could be found in the literature [1–3]. In our study, similar to prior studies, we defined a classification system for the pattern of facial and head injuries and also for the etiologies of trauma and analyzed the data accordingly. Although it is suggested that the details of the pattern and etiology of craniofacial injuries should be described in our article, we believe that it unnecessarily increases the number of variables, and the complex interrelationship between these variables makes interpretation of the data and comparison of the results with other relevant studies more difficult. Furthermore, because the aim of our study was to assess the association between head injuries and facial trauma, our case selection was based solely on the presence of facial trauma and the presence or absence of a head injury. So, systemic injuries were not considered as inclusion or exclusion criteria and not described.

It is suggested that in the conclusion, “the patients with concomitant head and facial injuries had a high GCS score (12–15) at the time of admission;” a conclusion that is not well supported by the results of the study. However, in the “conclusion” part of our article, we indicated that “most of the patients with concomitant head and facial injuries had a high GCS score (12–15) at the time of admission,” and this statement is well supported by the results, in which we have mentioned that “Fifty-eight percent of patients with head injuries had a Glasgow Coma Scale (GCS) score of 12–15 at the time of admission; 22 % had a GCS score of 9–11, and 20 % had a GCS score of 8 or less.”

I disagree that this is not a case–control study. A case–control study is an observational study in which two existing groups differing in outcome are identified and compared on the basis of some supposed causal attribute. Therefore, odds ratios are used [4]. In the same way, in our study, we compared patients with maxillofacial injuries who

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had an associated head injury to patients without a head injury. We evaluated the attributed risk factors by medical history taking. Therefore, our study has a case–control design.

The letter also questions if the “age can have some effects in the association of various facial bone fractures with pattern of head injury, but according to Tables 3 to 5, it seems that the adjusted analysis has not considered this important point.” In our study, three risk predictors including age, gender, and cause of the injuries and the association between these factors and head injuries were evaluated, and the results were presented in Tables 1 and 2. Separately, the pattern of facial bone fracture and its relationship with head injury were presented in Tables 3 and 4. In Table 5, only the pattern of head injuries in the study group was presented. Therefore, the absence of age

in Tables 3 to 5 does not indicate that it has no effect in the association between facial bone fractures and head injury.

References

1. Pappachan B, Alexander M (2006) Correlating facial fractures and cranial injuries. *J Oral Maxillofac Surg* 64:1023–1029
2. Hohlrieder M, Hinterhoelzl J, Ulmer H et al (2004) Maxillofacial fractures masking traumatic intracranial hemorrhages. *Int J Oral Maxillofac Surg* 33:389–395
3. Haug RH, Savage JD, Likavec MJ et al (1992) A review of 100 closed head injuries associated with facial fractures. *J Oral Maxillofac Surg* 50:218–222
4. Mann CJ (2003) Observational research methods. Research design II: cohort, cross sectional, and case–control studies. *Emerg Med J* 20:54–60