Dear Editor,

Le Fort fractures often extend to the skull base and/or frontal bone, which sometimes results in cerebral spinal fluid (CSF) leakage.\cite{1} These more severe fractures were so-called “Le Fort IV fracture.”\cite{2,3} The purpose of this study was to investigate the clinical features of Le Fort IV fractures.

A retrospective review of 19 patients with Le Fort type fractures who were treated in our Medical Center from 2008 to 2017 was conducted. Nine patients were defined as Le Fort IV fracture (Le Fort IV group), and one with Le Fort III, three with Le Fort II, and six with Le Fort I (Le Fort I–III group). Seven of the 9 Le Fort IV patients developed CSF leakage [Table 1].

We investigated several clinical results in both groups.

1. Associated injury: the most frequent associated injury was another head and neck fractures, followed by extremity fractures, thoracic injuries, and abdominal injuries, which showed a similar tendency in both groups [Figure 1].

2. Presurgical waiting days and hospitalization periods: the mean period to reduction surgery from injury in patients with Le Fort IV group was 12 ± 4.7 days,

Table 1: Cases of Le Fort type fracture

| Sex/Age | Le Fort type | Mechanism of injury | Associated injury | Treatment for Liquorrhea | Pre-surgical days | Hospitalization days | Prognosis and aftereffects |
|---------|--------------|---------------------|-------------------|--------------------------|-------------------|----------------------|---------------------------|
| 57M IV  | Motor vehicle traffic accidents | Liquorrhea, Optic canal fracture, Abdominal hemorrhage | - | 13 | 33 | Jejunum stoma, Facial nerve palsy |
| 23M IV  | Motor vehicle traffic accidents | Liquorrhea, Limbs fractures | - | 10 | 44 | Pseudo-joint of femur |
| 51M IV  | Vehicle accidents (tractor) | Liquorrhea, Liver injury, Optic canal fracture, Femur fracture | Frontal muscle flap transfer | 15 | 56 | Facial nerve palsy, Double vision |
| 68M IV  | Workmen’s industrial accidents | Liquorrhea, Temporal bone fracture | Spinal drainage | 18 | 35 | None |
| 42M IV  | Motor vehicle traffic accidents | Liquorrhea, Temporal bone fracture | - | 18 | 35 | None |
| 75M IV  | Falls | None | - | 11 | 18 | None |
| 64M IV  | Motor vehicle traffic accidents | Rib fractures, Thyroid cartilage fractures, Mandibular fracture | - | 14 | 27 | None |
| 35M IV  | Falls | Liquorrhea, Temporal bone fracture, Mandibular fracture | Frontal muscle flap transfer | 19 | 41 | None |
| 19M IV  | Motor vehicle traffic accidents | Liquorrhea, Tension pneumothorax | - | 5 | 42 | None |
| 42M III | Falls | Limbs fractures, Hemopneumothorax, Mandibular fracture | - | No surgery | - | Die of fat embolism |
| 29M II  | Motor vehicle traffic accidents | Limbs fractures, Mandibular fracture | - | 2 | 18 | None |
| 61M II  | Motor vehicle traffic accidents | None | - | 6 | 14 | None |
| 57M II  | Motor vehicle traffic accidents | Abdominal hemorrhage, Mandibular fracture | - | 4 | 26 | Jejunum stoma |
| 29M I   | Motor vehicle traffic accidents | Mandibular fracture | - | 4 | 30 | None |
| 23M I   | Motor vehicle traffic accidents | Mandibular fracture | - | 10 | 21 | None |
| 44M I   | Falls | None | - | 9 | 18 | None |
| 45M I   | Assault | None | - | 3 | 16 | None |
| 43M I   | Falls | Lung injury, Patella fracture, Mandibular fracture | - | 2 | 44 | None |
| 50M I   | Motor vehicle traffic accidents | Limbs fractures, Cerebral vein thrombosis, Disseminated intravascular coagulation | - | No surgery | - | Die of cerebral vein thrombosis |
Letters to Editor

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Conflicts of interest

There are no conflicts of interest.

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Figure 1: Differences in associated injuries in Le-Fort IV and I–III fracture groups

In our patients, 7 of 13 with Le Fort II or III fracture developed cranial base fracture, suggesting that the frequency of Le Fort IV fracture is high contrary to our expectations. The skull base fractures are of marked interest for physicians because it usually results in leakage of CSF and meningitis.\(^4\) Once CSF is confirmed, nonsurgical therapy is instigated in most patients, however, if CSF leakage continues for >1 week, lumbar drainage and/or surgical repair are required.\(^6\)

Our study showed that there was no statistically significant difference in the frequency of mortality or aftereffects between Le Fort IV and Le Fort I–III groups. Only the presurgical waiting and hospitalization periods were longer in the Le Fort IV group because it takes about 1 week to control the CSF leakage. Thus, once successful treatment of liquorhea is achieved, Le Fort IV fracture can be treated like any other surgical reduction of Le Fort I–III fractures.

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