Therapeutic strategy of Mandibular condylar fractures~Usefulness of the combination of open reduction and dynamic distraction treatment,

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PURPOSE: Although condyle is one of the frequent site of fracture in the mandible 1), anatomical and functional complexity of the temporomandibular joint (TMJ) make the treatment policy of mandibular condyle fracture controversial.2.3) Watanabe et al. reported a novel treatment for mandibular condylar fractures: a dynamic distraction treatment (PRS 2008). 4) This application of a dynamic internal distraction device is an effective and minimally invasive treatment; however, in our substantial experience on dynamic distraction treatment, we occasionally encounter rare cases in which resulted insufficient reduction of the fractured bony fragments. The purpose of this study is to investigate our clinical cases retrospectively, and establish a novel therapeutic strategy of mandibular condyle fracture.

METHODS: The subjects were 55 cases who underwent condylar fracture treatment in 2006-2014. In reference to the Spiessl classification, cases were classified depend on the site of fracture (intra-articular or extra-articular) and the location of the fractured fragment (no change, dislocation or displacement). Clinical outcomes were evaluated with regard to TMJ function and occlusion.

RESULT: Ten cases were treated by means of ORIF, 31 cases by dynamic distraction treatment, 2 cases by combination of ORIF and dynamic distraction treatment, and 12 cases by conservative therapy. The mean operative duration of ORIF was over six hours, and in some cases of intra-articular fracture, completion of surgery was impossible and discontinued. Dynamic distraction treatment worked well in most cases, however, in some cases with displacement of large bony fragments, only modest reduction was obtained and long period was needed to recovery of the TMJ. In such cases, combination of ORIF and dynamic distraction treatment achieved better outcomes. Conservative therapy was performed only when location of the fractured fragment was not changed.

DISCUSSIN: Dynamic distraction treatment is very effective when fractured fragment is not large (intra-articular fracture; Type VI) or the bone fragment remains within dislocation (Type IV, V). For extra-articular fracture with displacement of bony fragment (Type II, III), ORIF can be the choice, however, combination of ORIF and dynamic distraction treatment which can avoid plate

fixing and thus be less-invasive may be more preferred by many surgeons.

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