

## Editors' Pick in January 2023

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Among the papers published in this January issue of *Journal of Korean Neurosurgical Society (JKNS)*, two elegant papers were selected as noteworthy papers. One is a clinical study of a relatively large surgical series on Rathke's cleft cyst, which is a common lesion, but the indications for surgical treatment are controversial, and the other is a study on the automatic skull fracture diagnosis method using deep learning (DL) algorithm which is the most popular research technique in recent years.

### Surgical management and long-term results of Rathke's cleft cyst (RCC)

The authors retrospectively investigated the outcomes of RCCs that were surgically evacuated in a single institution. This study is considered meaningful in that it revealed that pituitary dysfunction occurs at a higher rate than expected after decompression surgery and that postoperative hormonal deterioration is associated with cyst recurrence<sup>4)</sup>.

Visual disturbance and headache from mass effect can be improved after decompression of RCC. But, when it comes to endocrinopathy, it is thought that there may be other mechanisms, such as inflammation of the capsule wall by prolonged pituitary compression for the reason that decompression alone

does not improve. Also, we should consider surgical trauma which can cause new-onset of endocrinological deterioration during the surgery.

The authors suggested endocrinological aggravation after surgery was related to the recurrence of RCC from the results of the current study, although the exact mechanism was not clear. Further study on natural history of RCC is expected to unveil the clinical significance of RCC in the future.

### Automatically diagnosing skull fractures using an object detection method and DL algorithm in plain radiography images

The use of DL algorithms in the medical field has already been active since the late 2010s. Researches on DL using various images obtained from X-ray, computed tomography, magnetic resonance imaging, or cerebral angiography are increasing rapidly<sup>1,3)</sup>. Timely in this era of academic change, Jeong et al.<sup>2)</sup> presented the utilization of DL methods for detection of skull fracture, as a result by collaboration between neurosurgeons and biomedical engineering experts.

This study showed object detection technology to find skull fractures in plain radiographs. This study differs from earlier investigations in that it utilized plain radiographic images of

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the skull. Finding the fracture line in a plain skull radiograph is sometimes difficult due to structures similar to the fracture line, such as blood vessels and suture lines. This study not only reports simple detection rates but also shows the results of DL in the process of finding fractures in plain radiographs with true/false, false-positive/negative analysis according to the type of skull series, comparison with adults and children, and DL model-specific/sensitivity analysis. If a follow-up study including external validation set is conducted, it will lead to a much more helpful that can be applied to in real world practice.

The editorial board of *JKNS* will post editorial picks with the participation of relevant editors when a new issue is published in order to inform the reader of *JKNS* that may be of interest to them. We hope that this will help readers keep up to date with the latest findings in neurosurgery and adapt to the changing trends of neuroscience.

## AUTHORS' DECLARATION

### Conflicts of interest

No other potential conflict of interest relevant to this article was reported.

## Author contributions

Conceptualization : HJY, SDK, IBC; Data curation : SDK, IBC; Formal analysis : SDK, IBC; Funding acquisition : HJY; Methodology : HJY; Project administration : HJY; Visualization : HJY, SDK, IBC; Writing - original draft : HJY, SDK, IBC; Writing - review & editing : HJY, SDK, IBC

## Data sharing

None

## Preprint

None

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