2020 Health Technology Reassessment Report

Endoscopic Epidural Neuroplasty

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Summary

Background of Assessment

Endoscopic epidural neuroplasty is a technology performed to reduce pain in patients with spinal pain. It is a procedure that inserts an endoscope into the sacral epidural space and directly observes the lesion with an image, removing adhesions in the epidural space and injecting therapeutic drugs.

After the announcement of measures to strengthen health insurance coverage (August 2017), as the conversion to the reimbursement benefits from health non-insured benefits in the areas of 'spine, musculoskeletal system, and pain' was promoted in 2020, the need to review the feasibility of benefit conversion has been suggested since the neuroplasty surgery (endoscopic epidural neuroplasty, percutaneous epidural neuroplasty, percutaneous epidural neuroplasty with balloon catheter) has a large non-reimbursement scale and it is expected that various issues will arise when changing benefits.

Afterward, the Ministry of Health and Welfare requested the National Evidence-based Healthcare Collaborating Agency to re-evaluate four existing spinal-related practices/procedures (intradiscal electrothermal therapy, endoscopic epidural neuroplasty, percutaneous epidural neuroplasty, percutaneous epidural neuroplasty with balloon catheter) (January 2020). Accordingly, the clinical safety and effectiveness of endoscopic epidural neuroplasty were evaluated at the 2nd Health Technology Reassessment Committee (2020.2.14.) in 2020 after reviewing the assessment protocol and subcommittee composition plan.

Purpose and Method of Assessment

In this assessment, a systematic literature review was performed to evaluate whether endoscopic epidural neuroplasty is clinically safe and effective for patients with spinal pain.

For the systematic literature review, the literature search was conducted in 5 domestic databases (KoreaMed, Korean Medical database, Academic Database, Korea Education and Research Information Service (KERIS), National Digital Science Links (NDSL)) and 3 foreign databases (Ovid MEDLINE, Ovid EMBASE, Cochrane Central Register of Controlled Trials) based on the above key questions. The application of the literature inclusion and exclusion criteria, data extraction, and risk of bias evaluation were all independently performed by two evaluators. For the risk of bias assessment, Cochrane's Risk of Bias was used for randomized studies. To evaluate the level of evidence in the literature, Grading of

Recommendations Assessment, Development and Evaluation (GRADE) was used. In consideration of the subcommittee's review opinion, the Health Technology Reassessment Committee presented the recommendation grade after final deliberation.

For this assessment, a subcommittee consisting of a total of 10 members (2 from the Department of Anesthesia and Pain Medicine, 2 from Department of Neurosurgery, 2 Department of from Orthopedic Surgery, 1 from the Department of Radiology, 1 from the Department of Rehabilitation Medicine, 2 from the Department of Evidence-Based Medicine)evaluated the literature basis for the safety and effectiveness of the technology through systematic literature review. At the 12th Health Technology Reassessment Committee (2020.12.11.) in 2020, the clinical safety and effectiveness assessment results of endoscopic epidural neuroplasty were finally reviewed.

Assessment Results

A total of one literature was selected for assessment, and it was compared with epidural nerve block in patients with chronic low back pain and lower extremity pain. The before-and-after studies of endoscopic epidural neuroplasty or studies comparing the percutaneous epidural neuroplasty, which are currently not covered, were confirmed, but all were excluded as they were studies that did not compare with the pre-defined comparative procedure.

As a safety result, the subarachnoid block was reported in 2% (1/50) of the intervention group alone. As a result of the effectiveness, the intervention group reported more improved pain relief, but the risk of bias was high due to a high proportion of unblinded patients, so the level of evidence was evaluated as 'low'.

Accordingly, the subcommittee was of the opinion that the technology could not be evaluated because there was insufficient evidence to judge the safety and effectiveness of the technology with only one selected literature.

Conclusion

The endoscopic epidural neuroplasty subcommittee made the following recommendations based on the current assessment results.

It is difficult to evaluate the safety and effectiveness of endoscopic epidural neuroplasty due to a lack of evidence because there is only one comparative literature with existing reimbursed treatments. It was judged that it was necessary to accumulate more evidence through well-designed research results compared with technologies within the reimbursement coverage such as epidural nerve

block for the assessment of this technology in the future.

The Health Technology Reassessment Committee deliberated as follows on ‘endoscopic epidural neuroplasty’ based on the subcommittee’s review results (December 11, 2020).

Although the safety of endoscopic epidural neuroplasty is acceptable when performed for pain reduction in patients with spinal pain, and there is only one literature comparing it with an epidural nerve block, and the evidence is not sufficient. However, it was evaluated as an effective technology because pain improvement was confirmed in the literature reporting the effects before and after the procedure or comparison with percutaneous epidural neuroplasty. It was judged that it was necessary to accumulate high-quality evidence compared with the appropriate procedure currently used in the reimbursement coverage in the future. In addition, there was an opinion that this procedure needs to be performed under considerable caution and supervision in the same way as percutaneous epidural neuroplasty because it was similar to percutaneous epidural neuroplasty and additionally used an endoscope.

Therefore, the Health Technology Reassessment Committee deliberated that endoscopic epidural neuroplasty for pain reduction in patients with spinal pain was recommended (Recommendation grade I-b).

Keywords

Spinal pain, Endoscopic epidural neuroplasty, Safety, Effectiveness