Review of the Telepathology Implementation for the Intraoperative Rapid Diagnosis in Japan

Introduction

We used the following items for evaluation: clinical needs, cost, training, targeted diseases, accuracy, time, diagnostic concerns, and equipment and system concerns. PubMed and Google Scholar were used to search previous articles using the following keywords [Japan], [telepathology], [intraoperative frozen section], [intraoperative rapid diagnosis], [pathologist shortage], [online training], and [AI].

Method

We used the following items for evaluation: clinical needs, cost, training, targeted diseases, accuracy, time, diagnostic concerns, and equipment and system concerns. PubMed and Google Scholar were used to search previous articles using the following keywords [Japan], [telepathology], [intraoperative frozen section], [intraoperative rapid diagnosis], [pathologist shortage], [online training], and [AI].

Findings

Telepathology has been reported to be superior in terms of accuracy and time required, but it is not yet widespread in Japan. Concerns about implementing telepathology included increased workload for pathologists, specimen quality, and facilities' costs and safety.

Ami Kato[1]*, Yudai Kaneda[2], Suzue Hara[3], Shinsuke Sawada[4], Rikuto HirayanagI[4], Tilyeubyek Talgat[5], Yoshino Tanaka[5], Arisa Nojima[6]

1. Medical Student, Oita University, Oita, Japan
2. Medical Student, Hokkaido University, Hokkaido, Japan
3. Medical Student, National Defense Medical College, Saitama, Japan
4. Medical Student, Toyama University, Toyama, Japan
5. Medical Student, International University of Health and Welfare, Chiba, Japan
6. Medical Student, Toho University, Tokyo, Japan

Proposed solution

Reducing the workload of diagnosis by actively introducing artificial intelligence (AI) or enabling collaboration and communication among hospitals and facilities would help solve these issues. Since the investment in facilities is often costly, it is important to use AI and remote consultation following the characteristics of the patients in the region so that remote pathological diagnosis can be performed in any region of Japan, thereby improving the quality of medical care.

Conclusion

Telepathology has benefits for both the health care providers and patients, such as reducing the workload of pathologists and limiting the surgical range of the patient. The solutions from the evaluation of multiple aspects illustrated in this study can improve the quality of medical care in Japan, and can also be applied overseas by promoting the introduction of remote pathological diagnosis in accordance with the situations at each facility.

Keyword

Telepathology, Intraoperative Rapid Diagnosis, Japan

Address for Correspondence:

Ami Kato
Oita University, Oita, Japan

informationisnotknowledge412@gmail.com