CQ13 Is remote image diagnosis useful for postmortem image interpretation?

Grade of recommendations: C1

Remote image diagnosis is considered to be extremely useful for postmortem image interpretation if it is possible to consult with an experienced specialist in postmortem image interpretation when no suitable specialist is available at the institution.

Explanation---
Backgrounds

Remote image diagnosis means "diagnosis performed by mutual (back and forth) transmission of digital images and related information between multiple facilities using a network". Remote image diagnosis aims to improve the quality of medical care by providing image interpretation capabilities by image diagnosis specialists using digital networks in regions with an insufficient number of experts [1].

Since the number of radiologists is limited, remote image diagnosis plays a role in image diagnosis of living bodies, in clinical radiology. Its usefulness is recognized but various problems have been pointed out [1]. The issue is to consider the possibility that interpretation may be required in situations where sufficient clinical information cannot be obtained due to remote image diagnosis, leading to a false diagnosis, and the difficulty of establishing where responsibility lies in the case of a wrong interpretation. The most important issue is the essential problem of the qualification of a remote image interpretation physician.

Whether it is an antemortem or postmortem image interpretation, it is clear that it can be useful to consult an appropriate expert in situations where there is no suitable expert at the facility where the image was recorded. Board-certified radiologists (Japan radiological society and others) qualify to interpret clinical images, but qualified specialists in postmortem image interpretation are not currently certified. To date, it is difficult to define what it is acceptable to call an expert in postmortem image interpretation. However, it is clear that there are fewer postmortem image specialists than clinical image specialists. From the viewpoint of effectively using available trained specialists, and if cost-effectiveness is not considered, it is useful that postmortem image interpretation specialists interpret postmortem images by remote image diagnosis in an appropriate interpretation environment with access to various data such as images and the results of a postmortem inspection.

Remote image diagnosis of postmortem images

In postmortem image interpretation, the concept of remote reporting of radiology in disaster victim identification was first suggested in 2009 [2]. In the position statement of a disaster victim

identification working group [2], it is recommended that when using postmortem CT, an appropriate specialist directly or remotely read the postmortem CT and prepare a report. The usefulness of remote image diagnosis in disaster victim identification was also reported [4].

Literature search formula and literature selection (2020/8/19)
PubMed

#	Search formula	Number of documents
1	(((((((((("postmortem") OR "post-mortem") AND "post mortem")) AND "imaging")) OR ((((("postmortem") OR "post-mortem") AND "post mortem")) AND "CT")) OR ((((("postmortem") OR "postmortem") AND "post mortem")) AND "computed tomography")) OR ((((("postmortem") OR "post-mortem") AND "post mortem")) AND "MR")) OR ((((("postmortem") OR "post-mortem") AND "post mortem")) AND "magnetic resonance")	4,600
2	#1 and remote	15

Ichushi（Medical Journal）

#	Search formula	Number of documents
1	(((死後/AL) and ((FT=Y) and AB=Y and PT=会議録除く)) or ((死亡時/ AL) and ((FT=Y) and AB=Y and PT=会議録除く))) and ((((画像診断/TH or 画像診断/AL)) and ((FT=Y) and AB=Y and PT=会議録除く)) or (((X 線 CT/TH or CT/AL)) and ((FT=Y) and AB=Y and PT=会議録除く)) or (((MRI/TH or MRI/AL)) and ((FT=Y) and AB=Y and PT=会議録除く)))	1,689
2	#1 and 遠隔	18

From other than search formula
[1, 3]

References

[1] Japanese College of Radiology (JCR), Remote Image Diagnosis Working Group (Masahiro Ida, President of JCR), Electronic Information Committee of the Japan Radiological Society (JRS) (Susumu Kanazawa, Chairman): Guidelines for Remote Image Diagnosis 2018 (Japanese)

[2] Guy N Rutty et al: Fimag: The United Kingdom disaster victim/forensic identification imaging system. J Forensic Sci 2009; 54: 1438-42. (Level 6)

[3] Morgan B et al: Use of post-mortem computed tomography in disaster victim identification:

positional statement of the members of the Disaster Victim Identification working group of the International Society of Forensic Radiology and Imaging; May 2014. J Forensic Radiol Imaging 2014； 2: 114-116 (Level 6)

[4] Guy N Rutty et al: Remote post-mortem radiology reporting in disaster victim identification: experience gained in the 2017 Grenfell Tower disaster. Int J Legal Med 2020; 134: 637-643 (Level 5)