

Consultation and Citation Rates for Older Imaging Studies and Documents in Radiology

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Rationale

We noticed that in quality assurance conferences the consensus conclusion was often that the mistake could have been avoided if more prior images or documents had been consulted. It was assumed that anything that was not specifically cited in the report had not been consulted. At the same time, the first author noted while reading imaging studies that she did not always cite in the report older studies or documents that she consulted. Therefore, was it safe to assume that an image or document that is not cited was also not consulted? It is this question that this investigation addresses.

Methods

In this IRB approved study, one observer watched the board-certified radiologists while they interpreted imaging studies and issued reports. He recorded what type of study was being interpreted (either computed tomography [CT], magnetic resonance imaging [MRI], or conventional radiography [x-ray]). He also recorded the number and type of prior imaging studies and documents that were consulted during the interpretation. These observations were then compared with the signed report to determine how many of the consulted imaging studies and documents were cited.

Results

Five board-certified radiologists issued 62 reports. Of the studies reported upon, 44 were CTs, 7 were MRIs, and 11 were radiographs. While issuing these 62 reports, the radiologists consulted 198 previous imaging studies and 285 documents ($p=0.0017$).

Of the 198 previous imaging studies that the radiologists consulted, 116 (58.6%) were cited in a report. Of the 285 documents consulted, 3 (1.1%) were cited in a report. This difference was statistically significant. ($p<0.0001$).

The interpreting radiologists consulted a variety of documents. Many were radiology reports, but the majority were not. For example, of the documents consulted in interpretation of the included CT scans, 60.5% were something other than a radiology report.

There was not a 1-to-1 correlation between numbers of imaging studies and numbers of radiology reports consulted. When CTs were being interpreted, the radiologists consulted 148 prior imaging studies but 92 reports. When MRIs were being interpreted, they consulted 27 prior imaging studies but 10 reports, and when conventional radiographs were being interpreted, they consulted 23 prior imaging studies and only 2

radiology reports. Similar results were seen when looking at the behavior of individual radiologists except that one radiologist consulted slightly more radiology reports (42) than imaging studies (39).

Radiologists tended to consult the same type of imaging study as that which they were interpreting. When CTs and MRIs were being interpreted, this relationship was statistically significant. As an exception to this pattern, when interpreting x-rays the radiologists consulted a different type of imaging study rather than another x-ray during 9 interpretations and consulted an x-ray in 8 interpretations.

Conclusions

It cannot be safely assumed that an older radiologic image or medical document was not consulted during radiologic interpretation merely because it is not cited in the report. Radiologists often consult more old studies than they cite, and they do not cite the vast majority of prior documents that they consult.