ABSTRACT

With the increasing availability of DICOM-conformant modalities, acting both as Storage Class and Query/Retrieve Class Users and Providers, there is interest in accessing images via the Internet. Via the Common Gateway Interface (CGI) and programming languages like Perl and Java, which offer both SQL database access and TCP/IP communications as part of the language, it is straightforward to implement a gateway from a DICOM server to the Internet via World Wide Web (WWW) protocol. A number of concerns can be raised, regarding both displayed image quality, transmission times, image compression, security restrictions and patient privacy.

We have implemented a DICOM-WWW gateway and have addressed many of the concerns raised above, in a academic hospital setting. Both CGI and Java have been used to provide the service. MRI and CT modalities were used as the test sources. In this presentation, we will present these issues in turn and attempt to address the foundation of such concerns and which techniques, if any, can be used to provide robust behavior of the DICOM-WWW gateway with respect to each. In particular, the issues of security and patient privacy will be addressed with respect to WWW communication protocols. The practicing medical physicist in the academic medical setting is likely to encounter these issues increasingly as more parts of the DICOM standard are implemented on the various modalities.