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EDITORIAL

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Is the Internet a Useful Tool to Educate Cardiac Surgery Patients?

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Adequate medical information is a crucial means to prepare, sensitize, and educate patients before and after surgical intervention. Although the benefits of proper and adequate patient education are enormous, a large number of patients remain unaware of how and where to retrieve medical information suited to their needs. The recent introduction and popularization of the World Wide Web (WWW) has revolutionized, in a short time, the way information is retrieved and communicated. The Internet has given, to a large number of users online, the possibility to access and gain immediate information of an encyclopedic breadth. The WWW is a potential tool that can help patients retrieve medical information and increase knowledge about innovative procedures. The adequacy and efficacy of Internet-mediated medical information has been poorly investigated. The population of "health care seekers" that access and search medical Websites on a daily basis includes patients that have already undergone or will undergo medical or surgical treatment, and people that do not have personal health related problems. It is important to discriminate between simple browsers and actual medical patients. In the field of cardiac surgery, for example, only a few authors have dedicated their attention to define the pros and cons of WWW-mediated patient education [Scherrer-Bannerman 2000].

In a recent survey, we investigated the way patients retrieve medical information before and after cardiac surgery [Murero 2001]. We focused our attention on the use of the Internet in patient education. A telephone survey was conducted on a group of 82 randomized patients who had undergone off-pump coronary artery bypass grafting (OPCABG) at the Center for Less Invasive and Robotic Heart Surgery in Buffalo, New York. A communicator scientist, specialized in Internet Studies, and a cardiac surgeon performed all telephone interviews. Questions were formulated to define the pros and cons of Web mediated medical information. Particular attention was given to define popular search engines and domain names, specific web-searches, difficulties encountered during web-navigation, and potential benefits of the retrieved information. Also investigated was the involvement of family members in Web-mediated patient education.

Among 82 patients interviewed, 35 (43%) had Internet access at home or at their work place. Of these 35 patients, 18 (51.4%) had used the WWW to retrieve medical information before or after CABG. The topic searched on the Net included specific information about OPCAB technique (3 patients), general information about CABG (5 patients) and coronary artery disease (10 patients), or information about cardiac medications (3 patients). Two patients specifically searched for mortality and morbidity rates of traditional CABG and minimally invasive procedures.

All patients found the WWW very helpful to access medical information. Access was easily achieved by using the most common Web-search engines. Fifteen patients (15/18; 83%) found some difficulty in fully understanding the information found on the Web, especially when medical terms were used. This caused, in some instances, an increased level of anxiety and frustration especially in patients waiting for surgery. Significant concern was also raised about the quality, credibility, and origin of medical information available on the Net. Involvement of other family members was very high (9 patients; 50%). Elderly patients required the technical support of younger relatives to perform the Web-search. Suggestions for improving the existing medical Websites were also asked for during the survey.

In order to increase the credibility of the information presented, all patients in this study indicated that they would benefit from access to Internet sites developed by their immediate health care provider (cardiologist or surgeon). In addition, the creation of patient based Web-forums was also believed to have importance in the dissemination of personal experiences with pre- and post-operative care after cardiac surgery. Only three patients would like to have morbidity and mortality rates of different cardiac surgery centers published on the Net. None of the patients thought that online consulting was applicable to healthcare-related issues. All patients agreed that medical information on the WWW should be reported using simpler language in order to make it more understandable to the majority of the Web users. Interestingly, the degree of college education had no correlation to the level of understanding of information provided by medical Web sites.

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Web-based education for cardiac surgery patients has already been investigated by others [Scherrer-Bannerman 2000]. In an original study entitled ROCEP (Rural On-line Cardiac Education Project) Scherrer, et al., analyzed the effectiveness of the Internet and other traditional methods of medical education in a group of patients awaiting cardiac surgery. Interestingly, the Web-based method offered increased social support, decreased anxiety, improved lifestyle, and more positive attitudes towards the impending surgery. This is supported by a recent NIH funded pilot study [Leaffer 2001]. In this study, Leaffer, et al., [Leaffer 2000] demonstrated that senior citizens can easily acquire computer and Internet skills to search for medical information on the Web; moreover, the elderly use this tool to assume an active role in their personal healthcare.

As the interest and the request for health information mediated by the Internet is proliferating, there is a growing need for objective, reproducible, widely accepted criteria that can regulate the publication of medical material on the Net. Criteria for evaluating Internet health information have been presented in a policy paper supported by the Agency for Health Care Policy and Research [Mitretek Systems Health Information Technology Institute]. Among the most important criteria are "credibility, content, and disclosure" of Web-based medical information. Although the Internet is a powerful tool for improving the health-care decision-making process, users should be aware of the potential for misinformation and should always assess the quality of the information that is provided. On the other hand, as health-care providers and possible Internet-content providers, it is in our interest to always post on the Net only high quality information accessible to our past, present, or future patients.

In spite of the tremendous impact that the Internet is having on the communication and information field, many clinicians and surgeons remain unaware of its actual potentiality and its possible future applications. In reality, the WWW is already changing our professional and private lives, giving us the possibility to quickly transfer, to our colleagues and also our patients, educational and research information. As Dr. Chitwood eloquently described in a futuristic editorial published in 1996 [Chitwood 1996], "Thoracic surgeons are changing from a posture of watching managed care and governmental agencies adjust the destiny of patient care and medical education to a proactive stance, attempting to help mold the future of health care … the exponentially expanding information age promises to make an even greater impact on medical education, clinical service, and basic research … ".

As we have demonstrated in this pilot study, more than 50% of our patients are exposed to a wide array of medical information on the WWW without the tutoring of their physicians. To date, our provision of medical education is available through journals that, like the HSF, are accessible on the Net. Although the importance of these publications for the scientific community is indisputable, we believe that it is in the best interests of all healthcare consumers to have access to a parallel Web-domain dedicated to the education of our patients.

REFERENCES:

1. Chitwood WR. The internet and the thoracic surgeon: a "virtual" future. Ann Thorac Surg 61:1603-4 1996.
2. Leaffer T, Gonda B. The Internet: an underutilized tool in patient education. Computers in Nursing 18:47-52, 2001.
3. Mitretek Systems Health Information Technology Institute. Criteria for assessing the quality of health information on the Internet. http://hitiweb.mitretek.org/docs/criteria.html.
4. Murero M, D'Ancona G. E-health: internet access to cardiac surgery. Presented at the International Conference on Interdisciplinarity, University of Queensland, Brisbane, Australia, June 11-12, 2001.
5. Scherrer-Bannerman A, Fofonoff D, Minshall D, et al. Web-based education and support for patients on the cardiac surgery waiting list. J Telemed Telecare Suppl 2:S72-4, 2000.

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