Peer reviewed article

Patient empowerment through the internet

The completely informed and thereby empowered patient is a fiction of today's medicine with the Internet being the most powerful source of information. Nevertheless, lay persons may already have clear notions about some symptoms and diseases without using the Internet. Chickenpox blisters or parotid swelling allow parents a diagnosis at first sight. For a judicious chief of a boy scouts camp the association of a tick bite with surrounding red skin is borreliosis until proven otherwise.

To doctors there are many triads that signalise a well-defined disease with a high probability. Fever, multiple pulmonary lesions and intravenous drug abuse, for instance, indicate right-sided infective endocarditis or anaemia, thrombocytopenia and renal failure suggest the haemolytic uraemic syndrome. In the majority of cases, quadrads and pentads are already more difficult to clarify. Very high degrees of difficulty eventually distinguish the famous case records of the New England Journal of Medicine with the need for extraordinary expertise to solve them. However, this no longer seems to be true. Tang and Ng have recently shown, that simply by using a tool that is open to the public, many physicians can easily disenchant the subtle argumentation of the experts in the New England Journal of Medicine. They presented the 26 case records from the year 2005 to experienced physicians, who were unaware of the diagnoses. A first discussion yielded three to five search items, which allowed the three best fitting diagnoses to be "googled" within a short time. In 15 out of the 26 cases (58%) one of the three was correct [1].

Daily, millions of medical laypersons try something similar with an unknown hit rate. The success cannot be that close to zero, since most physicians have experienced patients who hit the bull's eye. This is embarrassing and not inspiring of confidence, if the doctor has not yet done this. In this issue, Siempos and colleagues report that undergraduate university students in the field of applied mathematics or physics, in a comparable setting as used by Tang and Ng, reached the correct diagnoses of the same 26 NEJM cases in more than 20% [2]. The percentage might be lower in less educated or much older populations, but is remarkable. The merit of the paper consists in showing that even with a search tool not particularly committed to medical contents, this result can be achieved at all. Whatever the rate of correct diagnoses in other populations may be, it illustrates how the Internet can contribute to the changes in the doctor-patient relationship.

The average Internet user will probably address problems other than solving an NEJM case. "Is my inactivity the consequence of iron deficiency?" "Why does the doctor refuse to operate on my shoulder, when my colleague with exactly the same problem after a minimal invasive operation can play tennis again?" "What reasons other than the painkillers themselves could cause my chronic headache, as I have been told?" In most instances considerable "differential diagnostic" incertitude will remain.

Google suffers from the savant syndrome, a condition that combines a narrow area of expertise or brilliance in otherwise intellectually limited and often autistic persons. Langdon-Down, the creator of the syndrome, initially used the discriminating term „idiots savants". The most popular example are the twins described by Oliver Sacks, who were able to mentally calculate six-digit prime numbers but needed complete care in daily life [3]. The savant syndrome of the Internet presents both doctors and patients with the same problem, namely inflationary dilution by infinite abundance. Physicians through their profession should actually be familiar with the best way to solve this problem. It is not necessary to have a savant syndrome in the field of informatics. The pragmatic approach of a doctor in an emergency room, who continuously has to balance urgent versus not urgent and important versus not important, suffices. The art of using the Internet as interlocutor for clinical problem solving consists in converting an "idiot savant" into a true savant. To do that, medical expertise will continue to be needed.

1 Tang H, Ng JHK. Googling for a diagnosis – use of Google as a diagnostic aid: internet based study. BMJ. 2006;333:1143–5.
2 Siempos II, Spanos A, Issaris EA, Rafailidis PI, Falagas ME. Non-physicians may reach correct diagnoses by using Google: a pilot study. Swiss Med Wkly. 2008;138(49–50):741–5.
3 Sacks O. The man who mistook his wife for a hat, and other clinical tales. New York: Summit Books; 1985.

Correspondence:
Prof. Dr. med. Klaus Neftel
Luisenstrasse 45
CH-3005 Bern
klaus.neftel@medtec.ch

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