CIRUGÍA ESPAÑOLA

Editorial

Surgery on Twitter☆

La cirugía en Twitter®

Introduction

In the first decade of the 21st century, the Internet stopped being a mere repository of information to become a tool for communication between users, and the concept of Web 2.0 arose, coined by Tim O'Really.[1] Between 2003 and 2006, 4 of the most well-known digital social networks were launched consecutively: LinkedIn, Facebook, YouTube and Twitter. These platforms provide direct communication between users, whether with text, photographs or video. The most popular of these is (Facebook®), created by Mark Zuckerberg, with more than 900 million active users. For professional purposes, however, the most frequently used network by doctors is Twitter®, a microblogging application that currently has about 310 million active users.[2]

Twitter® allows for an account (represented by a string of characters preceded by the @ symbol) to have followers and to follow other users. What sets it apart from other networks is the format of its content: ''tweets'', which are messages of up to 140 characters that can include up to 4 photos or a video. The content can be marked as a ''favorite'' or spread among followers with a ''retweet''. Recently, streaming video has also been incorporated with the Periscope® application. It is especially useful to include a metadata tag (hashtag, #) placed before a string of characters, which facilitates searches of related tweets.

Surgeons, Surgical Societies and Scientific Journals on Twitter®

We surgeons are generally very interested in technological advances in our field, yet we are more reluctant to innovate in areas that are not directly related with surgery. It is therefore not surprising that it was not until early 2009 that a group of orthopedic surgeons at Henry Ford Hospital in Detroit[3] and another multidisciplinary group at the San Carlos Clinical Hospital in Madrid[4] began using Twitter® to disseminate live surgical interventions. Since then, its use has progressively proliferated other surgical specialties.

The individual use of Twitter has led to opinion leaders, whose impact transcends that of their specialty. As of December 6, 2016, tens of thousands of people (more than the number of practicing surgeons) view information generated by accounts such as Neil Floch (@NeilFloch, 108,944 followers), Tom Varghese (@TomVarghesejr, 9518 followers), Steve Wexner (@SWexner, 4659 followers) or Jeffrey Matthews (@JBMatthews, 3533 followers) in the United States; and Olivier Branford (@OlivierBranford, 104,257 followers), Richard R. Brady (@researchactive, 3422 followers), Antonio de Lacy (@AntoniodeLacy, 3413 followers) or one of the coauthors (@juliomayol, 16,564 followers).

Professional societies and surgical journals also play a very important role. On December 6, 2016, the number of followers of the American College of Surgeons (@AmCollSurgeons) was 30,179; of the Royal College of Surgeons of England (@RCSnews) was 29,481 and the Spanish Association of Surgeons (@AECirujanos) was 3,460. Among surgical journals, the most followed is *Annals of Surgery* (@AnnalsofSurgery) with 15,725 followers, then *JAMA Surgery* (@JamaSurgery) with 15,319 and *BJS* (@BJSurgery) with 8648. CIRUGÍA ESPAÑOLA (@cirugiaespanola) has 975.

In addition to individual or corporate use, Twitter® has seen special interest in 6 major areas of the surgical field:

1. Notification of surgery conferences (#acs16, #cnc16)
2. Diffusion and debate of articles published in surgery journals
3. Creation of specialized communities (#plasticsurgery, #colorectalsurgery)
4. Professional mobilization initiatives (#Ilooklikeasurgeon)
5. Diffusion of the activities of scientific societies
6. Patient education

Professional and Social Impact

At present, it is possible to measure and quantify personal impact, that of medical hashtags, and that of scientific articles, through analysis applications that are available either partially or totally free of charge:

1. Twitter analytics (accounts)
2. Symplur (medical hashtags)
3. Altmetric (scientific journals)

Twitter® analytics[5] is a basic tool that can be used by any registered user of the platform. Quickly and intuitively, it provides information on the number of times a tweet is displayed (impressions) and the number of users who have interacted with the tweet (interactions). This can be filtered by time segments and individual tweets. In addition, there is information about the number of profile visits, mentions of the account by other users, and the profile of the users that configure the audience of that account.

To measure the social impact of health care, researchers at Stanford University have developed the Symplur platform.[6] This tool is able to measure the impressions of a hashtag that has been previously registered on the platform, and its use is free of charge. It is identifies the temporal distribution and the accounts that generated them. The content of the hashtags can refer to a disease, a health issue or, more frequently, the acronym of a scientific event, conference or scientific community.

Finally, Altmetric[7] is a solution that measures the impact on Twitter® of articles published in scientific journals and converts it into a bibliometric index, the Altmetric Attention Score, which on December 6, 2016 monitored 6,689,308 scientific publications.

Looking to the Future and Proposals

For the future, we believe that it is necessary to consider 3 essential aspects:

1. The incorporation of academic activities in social networks as a positive aspect in the promotion of physicians
2. The risks of improper use of social media and the need to educate residents
3. Conflicts in the doctor-patient relationship

The importance of social networks in the dissemination of knowledge has already been recognized by some academic institutions. In 2010, the Mayo Clinic Social Media Network[8] was established with the aim to provide training to its professionals in the use of improved practices. Currently, the Mayo Clinic has decided to incorporate the academic activities of doctors in social networks among the criteria used for promotion within the institution. The process of integration with traditional media, such as publication in journals, has not been easy because of the difficulty in establishing equivalent comparisons and consistent tracking of all digital activity. However, this process has already been initiated. It will help legitimize the role of social media in the academic activity of physicians, and this step will certainly be followed by other institutions.

Although the use of social networks offers many opportunities, we surgeons must maintain our professional behavior and be especially aware of where and when we use these media, as well as any potential errors, the same way we do in our surgical activity. The content and composition of certain messages may have undesired adverse effects. In the United States, some surgical residency programs already include specific training on the safe use of social media. Activity on Facebook® or Twitter® is taken into account during the evaluation of the candidates by the program directors.[9]

Furthermore, Twitter® provides us an unprecedented opportunity to educate patients, an example of which is the virtual communities of physicians and patients created around a specific disease tag.[10] However, social networks should not be used for direct communication with patients.[2] Another controversial aspect that should be clarified in the future is the inclusion of images from scans, clinical photographs or videos, even if the patient cannot be identified.[11]

In short, it has been little more than a decade since the launch of digital social networking platforms and, despite initial reluctance, they are becoming a powerful channel for global communication for surgeons. Twitter® is the preferred tool for individual and corporate activity as well as the dissemination of knowledge. In the future, professional activity in social media will have a measurable impact on career advancement, but it is not without risks. Therefore, we surgeons must follow bioethical principles and professional codes that govern the relationship between professionals and their patients.

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