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Editorial

Leadership and teamwork: An efficient and necessary combination in current Surgery

Liderazgo y trabajo en equipo: una síntesis eficiente y necesaria en la cirugía actual

From a technological point of view surgery is becoming more complex day by day and it is practiced in a context which is continually changing. Surgeons work in the Surgery Department of which they are a part, often in a specialized unit. They participate in interdisciplinary groups and perform their daily clinical activities in conjunction with other specialists and technicians in different settings (the operating theatre, hospital ward or A & E department). Their primary aim is to provide patients with the best care without compromising their safety. Nowadays, when people demand *surgery which is safe for the patient* in highly prestigious forums, it needs to be remembered that the complications which arise during treatment (in 45% of surgical patients) are rarely the result of a mistake made by a single individual. In over 80% of cases they are related to poor planning of patient care systems or instead to failures in *teamwork*.[1]

A significant number of studies draw our attention to the importance of effective *teamwork,* which by its very nature must be interdisciplinary in order toensure that quality is maintained throughout the treatment of the surgical patient.[2,3] Amongst these there are two that stand out: the study entitled "To Err is Human: Building a Safer Health System", published by the Institute of Medicine in 2000, in which the high percentage of errors detected in the *Health System* of the USA[4] was evaluated and the very well-known *Kennedy Report,*[5] which analyzed the extremely high mortality rate of a paediatric cardiovascular surgery department in Bristol in the UK. As a result of the 2 studies cited above, the *American College of Surgeons* launched the *National Surgery Quality Improvement Project*, by means of which it managed to reduce mortality by a third and morbidity by two fifths in the group of surgery departments which participated.[6] The global analysis led to an obvious conclusion: the causes of human mistakes and their adverse consequences for the patient are deficiencies which are related to *teamwork* and *communication* between team members.[7]

Although it is true that the stereotype of the self-centred, overbearing and even violent surgeon has been surpassed, it is not uncommon for surgeons to think that *they work as a team*, when, in fact, they work *in a group*.[3] *Teamwork,* the indispensable basis of which is *leadership*, implies making consensual decisions, analyzing the reasons for disagreements and attempting to solve them, as well as trying to ensure that targets are comprensible so that they can be accepted by the team. It means encouraging all team members to contribute their own ideas, demanding that the way the team functions is regularly reviewed, doing everything possible to ensure that the work of each team member is valued and, finally, sharing leadership when necessary. *Teamwork* is not easy, although, with good leadership and appropriate training of team members in *cognitive skills* and *personal relationships* it is achievable.

The results obtained in recent research studies indicate that surgery departments need to develop *teamwork* programmes in order to train personnel in specific tasks (operating theatre, A & E Department, hospital ward), as has already been done successfully in other high-risk professions, such as aviation, by applying the methodology known as *crew resource management* (CRM).[8] Prominent amongst the key elements of this methodology, which can be applied to the work of surgeons, are: "briefing" (a preliminary introduction to the action plan), *discussion* by the *senior* and *junior* team members of the decisions to be taken and "de-briefing" sessions (understood as the discussion a posteriori of what has happened). The fulfillment of these demands can only be achieved in a working atmosphere in which there is fluid communication amongst the members of a team and in which everyone is always willing to learn.

The "Non-technical skills for surgeons" project, designed by the University of Aberdeen, has identified a series of *cognitive* and *personal relationship skills*, which should be the essential complement to the technical competence of the surgeon, with the aim of maintaining high levels of quality and safety in the operating theatre.[9] The most important of these *skills* are the surgeon's capacity to exercise leadership, a state of permanent alertness, the ability to make the most

appropriate decision at each moment in time and an ability to stimulate communication and teamwork. Currently there are instruments which allow us to assess *teamwork and skills*, which are not technical as such, in situ within the operating theatre.[8]

There are various studies which have demonstrated a correlation between *teamwork (*surgeons, anaesthesists and instrumentalists), "performance" and *safety in the operating theatre*.[10] It has been calculated that up to a 1/3 of the time it takes to perform an activity in an operating theatre there are failures in communication within the surgical team. 33% of these failures cause delays, transitory solutions to an unresolved problem ("work around"), increased tension in the atmosphere, unnecessary expenditure and inconvenience to the patient.[11] For the first time a recent study evaluated the impact a *training course in non-technical skills* (CRM methodology) had on the results of 2 types of surgical intervention and demonstrated that the improvement observed in *teamwork* produced the best technical results.[12] This data corroborates, although in a different context, the results of the multi-centre *MedTeams* project in the USA, in which the application of the CRM model was assessed in A & E departments. It was found that there was a reduction in clinical errors (30.9%-4.4%), and an improvement in *teamwork* and in the *attitudes* of team members. This is the most obvious example of how an improvement in *teamwork* can avoid complications.[13] It is possible that *Web*-based training systems and patient simulators, which permit specific *teamwork* behaviours to be put into practice, could avoid the need for real instructors.[8,13,14]

However, given that efficient *teamwork* does not develop spontaneously, it is best to stimulate the development, as soon as possible, of a new *hospital culture*. To do this it will be indispensable for hospital administrations and Surgery Departments themselves to provide the training instruments which will facilitate its implementation.[15]

However, above all, it is essential to have well-trained surgical leaders, who are capable of motivating and modifying the behaviours of team members for the better, the ultimate aim always being the best possible outcome for the patient.

It would be desirable for scientific societies and the National Health Service itself to develop similar programmes to that of the Royal College of Surgeons of England,[3] which are targeted specifically at training leaders and their corresponding surgical teams. This would undoubtedly improve the safety of patients.

REFERENCES

1. Rogers SO, Gawande AA, Kwaan M, Puopolo AL, Yoon C, Brennan TA, et al. Analysis of surgical errors in closed malpractice claims at 4 liability insurers. Surgery. 2006;140:25-33.
2. National Confidential Enquiry into Perioperative Deaths. Functioning as a Team: The 2002 Report of the National Confidential Enquiry into Perioperative Deaths; 2002. Available from: URL: http://www.ncepod.org.uk/pdf/2002/02full.pdf
3. Giddings A, Williamson C. The leadership and management of surgical teams. A position paper prepared for the Council of The Royal College of Surgeons of England. 2007.
4. Kohn LK, Corrigan JM, Donaldson L, editors. To err is human: building a safer health system. Washington, DC: National Academy Press; 1999.
5. Bristol Royal Infirmary Inquiry. Learning from Bristol: the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984-1995. Command Paper: CM 5207; 2001.
6. Khuri SF. The NSQIP: a new frontier in surgery. Surgery. 2005;138:837-43.
7. Davenport DL, Henderson WG, Mosca CL, Khuri SF, Mentzer RM. Risk-adjusted morbidity in teaching hospitals correlates with reported levels of communication and collaboration on surgical teams but not with scale measures of teamwork climate, safety climate, or working conditions. J Am Coll Surg. 2007;205:778-84.
8. Healey AN, Undre S, Vincent CA. Defining the technical skills of teamwork in surgery. Qual Saf Health Care. 2006;15:231-4.
9. Yule S, Flin R, Paterson-Brown S, Maran N, Rowley D. Development of a rating system for surgeons' non-technical skills. Medical Education. 2006;40:1098-104.
10. Catchpole KR, Giddings AE, Wilkinson M, Hirst G, Dale T, De Leval MR. Improving patient safety by identifying latent failures in successful operations. Surgery. 2007;142:102-10.
11. Lingard L, Espin S, Whyte S, Regehr G, Baker GR, Reznick R, et al. Communication failures in the operating room: an observational classification of recurrent types and effects. Qual Saf Health Care. 2004;13:330-4.
12. McCulloch P, Mishra A, Handa A, Dale T, Hirst G, Catchpole K. The effects of aviation-style non-technical skills training on technical performance and outcome in the operating theatre. Qual Saf Health Care. 2009;18:109-15.
13. Morey JC, Salisbury M. Introducing teamwork training into Healthcare organizations: implementation issues and solutions. In: Human Factors and Ergonomics Society 46th Annual Meeting; 2002.
14. Aggarwal R, Undre S, Moorthy K, Vincent C, Darzi A. The simulated operating theatre: comprehensive training for surgical teams. Qual Saf Health Care. 2004;13(Suppl 1):i27-32.
15. Stevens JP, Rogers SO. Communication and culture: opportunities for safer surgery. Qual Saf Health Care. 2009;18:91-2.

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