

14th EFORT Congress 2013

5-8 June

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EFORT 2013: 7,500 orthopaedic specialists gather in Istanbul

Increased safety in orthopaedic surgery: New tools for assessing individual infection risk

Infections following orthopaedic surgery cause prolonged suffering and multiply the costs of care. They pose a serious problem for the health care sector. A scientific app is meant to assist patients and physicians in assessing possible risks of infection and minimise variable risks prior to implantations. Experts speaking at the EFORT Congress in Istanbul said that patients could also contribute to preventing infections.

Istanbul, 7 June 2013 – "Although we will never be able to eliminate infections altogether, we should still ask ourselves before each orthopaedic operation whether we can further reduce the risks involved. The rule of thumb is this: One minute of infection prevention saves one hour of infection treatment. There is a growing awareness of this fact but everyone has to keep it in mind," said Dr Olivier Borens (University Hospital of the Canton of Vaud, Lausanne, Switzerland). He was speaking at the 14th Congress of the European Federation of National Associations of Orthopaedics and Traumatology (EFORT) in Istanbul, where 7,500 experts are discussing latest developments in their field.

The number of limb or joint implants is on the rise in Europe due to demographic changes and longer life expectancy. From 2000 to 2010 alone, the number of hip implants increased by 40% in Denmark, by 25% in Spain and by 10% in France. These procedures are interventions that can be readily planned, unlike bone fractures. Nonetheless, infection occurs in 1 to 2% of all hip or shoulder implants, 2 to 3% of all artificial knee surgeries, 4% of ankle procedures and up to 10% of all elbow procedures. Dr Borens: "For patients, the complications mean enormous discomfort, an arduous recovery and possibly chronic inflammations. They multiply unnecessary expenses for health care budgets. The costs resulting from a post-operative infection can be ten times higher than the surgery itself due to further medical costs, outlays for antibiotics, follow-up operations or work disability."

Organisational blindness as a risk factor

No new prophylactic strategies have to be developed to prevent postoperative infections. Dr Borens: "We merely have to follow existing methods. But like pilots, we should always go through a checklist of the most minuscule safety details and be aggressive and determined in fighting even the tiniest neglectfulness that might lead to an infection before, during or after surgery." The latter include an imprecise assessment of which patients are operable, conditions in operating theatres not in conformance with guidelines or mistakes in wound management following surgery. "It is essential to conduct training for everyone involved in the operations, patients included. Of course, surgeons know the bandages placed on wounds in operating theatres are the cleanest of all because sterile conditions prevail there. But are patients also aware that they are not supposed to remove these bandages in the first several days after the operation?" According to Dr Borens, the biggest risk factor is the sum total of all details easily overlooked in everyday hospital life: e.g. strands of hair that slip out from under a surgical cap or a small hole in the paper on which the sterile surgical instruments are lying. That is why external audits and risk management measures are

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indicated to ensure that hospitals do not suffer from organisational blindness for possible sources of error. Surgeons should also be specially trained to detect the risk factors for a postoperative wound infection, including factors involving the patients themselves.

Calculating statistical risk

The goal is to make it easier for physicians in future to pinpoint and assess these risk factors. Dr Carlo Luca Romanò, professor at the University of Milan and President of the European Bone and Joint Infection Society, is currently finalising a long-term project together with Dr Javad Parvizi, President of the Musculoskeletal Infection Society in the US. The project covers specialised medical literature from around the world. Their teams determined 20 possible risk factors for postoperative infections and assessed them based on statistically relevant research findings. Prof Romanò: "Our goal is to arrive at a clinically based point system to provide information about the statistical probability of infection following surgery. For all their merits, classification and assessment systems available up until now are too general and give physicians enormous leeway for interpretation. The new scoring system covers more risk factors and is much more precise in the conclusions they allow while also providing genuine help prior to a planned operation."

The future risk index also overshadows previous assessment systems because it helps to interpret the complex interplay amongst these varied factors. Prof Romanò: "The risk factors can be linked with each other and assessed as such, thus allowing us to estimate possible instances of interaction and potentiation. For many factors, the risk is not simply added up, it is multiplied. Other factors must be weighted many times heavier if they occur in an elderly person with multiple morbidities. The planned risk index will enable us to draw up substantially more precise patient topologies."

Infection as main reason for prostheses being rejected

The search for risk factors is of huge significance, especially in implantology, as figures from the US show. Postoperative infections are the number one reason for knee prostheses being rejected; for artificial hips, they are the number three reason. Patients themselves can influence a number of risks, a fact of which the broad public as well as surgeons are too little aware. Prof Romanò: "Risk factor for peri-prosthetic infections can be divided in those related to the provider of the surgical procedure, to the post-operative management and to the patient that will receive the implant. According to this classification, we are able to show how patient related risk factors largely exceed the other ones, both in absolute figures and their specific impact on risk. In this regard, our system is able to show clearly how the individual factors are to be weighted."

To prepare patients optimally for surgery, the variable risk factors should be eliminated or mitigated. For instance, patients could stop smoking prior to surgery, stop taking drugs containing cortisone, improve high blood pressure or poorly regulated diabetes or reduce obesity. Prof Romanò: "If the calculated infection risk is extremely high, one should consider whether the surgery might bring more disadvantages than benefits and if so, one should dispense with it." This highly complex assessment tool is meant to be as easy as possible to use and to be made available to physicians and patients as a free app to improve preparation for surgery.

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About EFORT

The European Federation of National Associations of Orthopaedics and Traumatology (EFORT) is the umbrella organisation linking Europe's national orthopaedic societies. EFORT was founded in 1991 in the Italian Marentino. Today it has 42 national member societies from 43 member countries and six associate scientific members.

EFORT is a non-profit organisation. The participating societies aim at promoting the exchange of scientific knowledge and experience in the prevention and treatment of diseases and injuries of the musculoskeletal system. EFORT organises European congresses, seminars, courses, forums and conferences. It also initiates and supports basic and clinical research.

Source: EFORT Instructional Lecture: Risk factors for postoperative infection

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