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SURGICAL SITE INFECTION AND THE SURGEON'S RESPONSIBILITY

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The last decade showed a great reduction in the incidence of infection in European countries. The best example is post operative disc space infection in Canada which was in the range of 4–5%. Now it is less than 1%. This is related to so many factors. On top of the list is the awareness and serious precaution on the surgeon's side, and down on list is the new generation of strong antibiotics.

Sadly, our incidence is still very high and more painful. So far, we don't have the precise statistics for this serious matter.

Infection is the outcome of two factors; one is patient's related risk factors such as diabetes mellitus, obesity, defect in immune system and pre-existing colonization with methicillin–resistant *staphylococcus aureus*. The second is intra-operative risk factors which contribute more to surgical site infection than patient's related factors.

Surgical site infections are the most common nosocomial infections. These complications may lead to real disaster; it is behind prolonging morbidity if not mortality. It is behind delayed wound healing, increased use of antibiotics, increased length of hospital stay, all of which have a significant impact on the patients and the cost of health care.

Luckily, infection unlike malignancy is avoidable and curable on so many occasions, so it is really painful to lose the battle with what is at our hands.

The surgeon is commander and leader, so he is the first to face this unhappy outcome. The patients are used to forget everybody in the field but not the surgeon.

Depending on this big responsibility, it is the surgeon's job to ask himself why an infection occurs, why the outcome was spoiled by avoidable causes. Infection can be caused by a simple reason or a big reason.

What is very important are the precautions taken prior to surgery, intra operative precautions and early detection to avoid the occurrence of the calamity.

The avoidance of infection starts in the pre-operative preparation. It is the surgeon's responsibility to choose the right patient, in the right time and in the right place, and to make every measure required to reduce if not to abort infection in the pre-operative period. This is one of the keys for success.

Likely, important is the intra-operative measures such as proper skin preparation, adherence to sterile techniques, duration of surgery, traffic and even noise in the operative room, proper handling of the tissue, anatomical dissection and perfect haemostasis and drainage which is preceded by a search for a hidden focus of infection in the pre-operative period.

Many anti-septic agents are available in the market for skin disinfection with wide range of activities. Probably the best is a combination of 70% isopropyl alcohol and 2% chlorhexidine. A significant decrease in the number of surgical site infections found with chlorhexidine solution compared with povidone iodine which is very frequently used in our locality (9.5% and 16.1% respectively).

In regard to hand washing, considerable controversy exists. It is probably the most critical measure in reducing the risk of transmitting micro-organisms. Traditional scrubbing damages the skin and leads to bacterial shedding. It is not of added benefit to rubbing with antiseptics like alcohol and chlorhexidine. Adhesive incision drapes, is theoretically sound but not proven clinically.

Hair shaving is more of traditional than appropriate part, because micro-trauma increases localization of bacteria, so shaving may increase surgical site infection.

The surgeon should not forget the basic four factors with serious impacts, which is exchange of surgical teams, movement in the room, operative room noise and the presence of visitors.

Wound irrigation, with normal saline, with or without antibiotics is beneficial to keep the tissue wet and healthy. This is my and others routine practice, but unfortunately so far, not supported by meta-analysis, so the effectiveness of irrigation remains unclear.

Follow-up in early and even late post-operative period is as important as the pre-operative and intra-operative care, because by early detection we may abort infection and prevent the storm.

Finally, the surgeon is the principal player in the field. He is the leader and the commander, he is the first and the last to face the problem and he is the price-payer.

Personally, I feel the surgeon is never blameless, because he can guide the game to the best possible and by doing so he can reduce infection to a great extent, but certainly not to a zero incidence even in the best centers in the world.