Stevens Johnson syndrome during postoperative period. A case report

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Introduction: The Stevens Johnson syndrome is a rare and potentially fatal cutaneous reaction to medicaments or infections. The most common drugs linked to this syndrome are antibiotics (such as sulfonamides, cephalosporines and quinolones), anticonvulsivant drugs (carbamazepine, phenytoin) and nonsteroidal anti-inflammatory drugs (NSAIDs). It is characterized by extensive necrosis with detachment of the epidermis, and the mortality rate rises up to 30%. We present a case of Stevens Johnson syndrome associated with drugs administration during postoperative period.

Case description: A 73-year-old female reported to Department of Hepatic Surgery for a hepatectomy due to colorectal liver metastases. Her oncological history initiated 5 months ago with a colorectal obstructive tumor and liver metastases in both lobes. An emergency Hartmann procedure was performed following adjuvant chemotherapy, with good response. The surgical team decided to perform a two stage hepatectomy. The postoperative period was torpid and a reintervention for bowel obstruction was required, as well as two long stays in the Intensive Care Unit. A month after the first surgery, the patient presented with a reddish maculopapular lesion on the neck that rapidly extended to the back and forearms. An intra-oral erythema and conjunctival ulcerations were also noted. The diagnosis of syndrome was confirmed by the Department of Dermatology with a skin biopsy. Pharmacology and Allergy Departments completed the study and proposed that the syndrome was possibly due to penicilne and NSAIDs. Despite the efforts of the multidisciplinary team, the supportive care, and the early retreat of the possible causing drugs and ciclosporine plus corticosteroids treatment, the patient presented with severe liver failure and finally died after 2 months of hospitalization.

Conclusions: Cutaneous reactions are a very common condition during the postoperative period, most of them are related to habitual drugs regimens. Considering this, it is of paramount importance to keep in mind that the Stevens Johnson syndrome is a rare but severe dermatological pathology in which early diagnosis and treatment is vital.

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Advanced concepts for medical robotic systems

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With the first recorded medical application of a robot - a CT-based orientation of a needle guide for biopsy of the brain - occurring in 1985, a number of research groups in Asia, Europe, and the USA began investigating other medical applications of robotics. Beside of a big number of research prototypes and scientific outcome, a relatively small number of commercial ventures were resulting from these efforts.

Now, after more than 30 years of activities and compared to many other fields of medical technology, medical robotics still can be considered as of being in its infant state. The number of commercially available setups actually could be increased, but only few of them really have created significant impact. Many research questions have been addressed in order to improve the technology, but the gap between research in laboratories and real use in surgical routine seems to get even bigger. If one looks to the main reasons for this slow adoption of new technology, it turns out to mostly not being related to technical functioning, but to other factors such as:

- cumbersome use of robots (complexity, size, missing integration into clinical workflow) which hinders application in clinical routine,
- high cost for robot system and operational cost (i.e. cost/benefit ratio is not satisfactory in most cases),
- high setup time and effort (e.g. additional person for operating robot system),
- limitation in portability and/or mobility,
- unsolved safety issues.

The presentation will include a short introduction into medical robot systems for surgical applications. Topics include issues such as kinematic configurations, interfaces to existing surgical equipment, but also matters related to standards and regulations. One key aspect for (future) medical robots is related to its main operation principle. Current commercial robot systems are either directly controlled by a human operator or strictly follow a pre-defined path. Automated systems are limited to setups where no direct contact between robot and/or the guided tool takes place, e.g. to compensate (to a certain degree) breathing motion in external radiotherapy or for imaging purposes. On the cognitive side, a long thought-after feature is to estimate what the surgeon would like to do next. This could be taken into account when planning and executing the next movement of the robotized tool or camera. Additional of cognitive capabilities to the robot also has the potential to take a further step toward surgical automation, e.g. for the awareness of the current medical situation and the ability to react in a suitable way. Concrete robot applications - such as for percutaneous placement of needles for tumor ablation, neuro-surgical applications, or vitreo-retinal surgery - will further help to illustrate the possibilities but also the limitations of current medical robotics technology.

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