All drugs in identical flasks
And flasks (re)used for uncommon toxic substances

Case report

The chief surgeon noticed a 1 cm well-defined circular growth at the base of his neck and asked a colleague to remove it under local anesthesia. Right from the start of the local anesthetic injection the patient experienced excruciating pain, interrupting the infiltration. About one milliliter had been injected subcutaneously. It was found that 3.4% glutaraldehyde had been injected instead of procaine. The region soon became necrotic and a torpid lesion extended sideways and deep in the tissues. By chance the process did not reach the trachea nor any major blood vessel. Later, plastic surgery was needed to prevent retraction.

Discussion

The above case occurred in another European country, which does not alter its relevance to our daily practice: a rather similar case occurred a few months ago in Belgium, resulting in the death of a child. The pictures illustrate the danger of a system where all drugs are distributed in bottles sharing a common pattern of form, colors, labels and print. Note the similarity between procaine and potassium chloride solutions; inadvertent injection of the latter in place of the former, no matter by which route, would have dire consequences.

Pharmacy also used the same bottles for toxic non injectable substances such as glutaraldehyde, a tanning agent used to preserve tissue samples for pathology or embalming. It only took one human error, failure to read the label or incorrect recognition of what was written on the label, to provoke the accident. Colorless glutaraldehyde was poured in the tin cup on the surgical tray, while procaine filled the biopsy tube.

One has to strive and build a drug distribution and labeling system that favors immediate recognition of drugs instead of relying on human performance at the execution end of the process. Several improvements in the system could avoid such accidents to recur.