CHAPTER 6

The medical complications of drug abuse

D. Louria

As the prevalence of drug abuse around the world increases, so does the incidence of medical complications. It is clear that no drug used illicitly for mind altering purposes is free of medical complications. It is equally clear that the following list for each of the major categories of drugs used currently will be expanded in future years as more persons become involved in the drug scene and more of the consequences are recognized and recorded in the medical literature.

HEROIN AND OTHER ILLICITLY USED OPIATES

OVERDOSE

The most feared consequence of heroin injection is so-called ‘overdose’. This may be experienced by the veteran heroin user as well as the neophyte. There continues to be an angry debate about the nature of overdose, but it would appear that the overdose syndrome can be divided clinically into three groups.

Respiratory depression

First there are those who experience profound respiratory depression and in some of these cases, apnoea ensues. There are no adequate data indicating the incidence of respiratory depression after heroin; presumably it occurs relatively infrequently but the overwhelming majority of long term heroin abusers experience ‘overdose’ at least once. There are many who feel that the use of the term overdose is unacceptable for this syndrome on the grounds that among those dying from so-called overdose, tissue opiate levels may be surprisingly small.
Additionally they point out that ‘overdose’ may supervene in a chronic heroin user who presumably ought to be tolerant and therefore able to withstand enormous amounts of the drug given intravenously. But their arguments cannot contravene the fact that in this form of overdose, something is depressing the respiratory center, presumably the opiate, since opiates are known to so affect the brain. Furthermore the treatment of choice in cases of profound heroin-induced respiratory depression is an opiate antagonist, including nalorphine, levallorphan or naloxone. When these medicaments are administered, the respiratory rate increases promptly; this in itself strongly supports the notion that the respiratory depression was due to an opiate.

**Acute pulmonary edema**

The second form of overdose is acute pulmonary edema of non-cardiac origin. This may kill so rapidly that at autopsy the needle is found still in the vein. In most cases the pulmonary edema occurs within two hours after heroin injection but occasionally its onset may be delayed for four to six hours. If the drug is taken by the nasal route, pulmonary edema may on rare occasions appear up to 48 hours after heroin use.

In these patients, the respiratory rate ranges from less than 5 to more than 60 per minute. Physical examination usually shows a stuporous individual with severely constricted pupils. Examination of the lungs reveals no dullness to percussion and no evidence of consolidation, but on auscultation bilateral rales and rhonchi are evident. Chest roentgenogram usually shows bilateral infiltrates radiating from the hilum, mimicking cardiogenic pulmonary edema, but there is in most instances no increase in central venous pressure, no cardiomegaly and no pathological evidence in those who die of significant cardiac dysfunction.

In some cases an important clue to the correct diagnosis is a normal or slowed respiratory rate in the presence of extensive bilateral infiltrates on chest x-ray. In such circumstances, the respiratory rate ought to be profoundly increased; if it is not this suggests depression of the respiratory center. If the respiratory rate is increased, the diagnosis can be suspected by a history of heroin use and by the presence of needle marks and constricted pupils. It is well to remember that pupillary constriction can also follow brain trauma and that profound hypoxia can cause pupils that otherwise might be constricted to dilate.