LETTERS TO THE EDITOR

Genital examination under ketamine sedation in cases of suspected sexual abuse

EDITOR—We were surprised by the choice of ketamine as a sedative agent in genital examination in cases of suspected sexual abuse. Ketamine is an unusual anaesthetic agent. It is a derivative of phencyclidine (‘Angel Dust’) and produces a dissociated anaesthetic state; categorised with profound analgesia. The drug interferes with the patient’s ability to organise thoughts and understand the environment during emergence from anaesthesia. Although less common, data in adults, uneventful emergence phenomena are not rare in unpremedicated children (8% under 16 years, 24% over 16 years of age). In addition, ketamine may cause severe delirium, hallucinations lasting up to a year in children. An anti-sialogue is an important adjunct to block the increased salivation caused by ketamine, but atropine has the disadvantage of increasing the incidence of unpleasant dreams. These psychomimetic properties tempered the initial enthusiasm for ketamine in the anaesthetic community and have tended to limit its use to those situations where the anaesthetic, sympathomimetic and catecholamine properties are useful, such as in the dressing of burns and the management of trauma and mass casualties.

We feel that ketamine is not a suitable agent for the difficult problem of examining suspected victims of child sexual abuse because emergence phenomena may result in the child interpreting the examination itself as sexual abuse. We would suggest that if ketamine is used, an intravenous anaesthetic such as a benzodiazepine should be added as this has been shown to reduce the incidence of emergence phenomena. Although ketamine allegedly does not depress the airway reflexes, aspiration has been reported1 so the child should be fasted before the procedure.

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Dr Harari comments:
The correspondence about our article pertains to the choice of sedative agent rather than the principle of sedation. Our aim was to initiate an awareness of the occasional need for sedation in genital examination, not to champion the virtues of ketamine. The choice of sedating agent and who should administer it is a matter of controversial issues.

We chose ketamine in our three children because we are familiar with the drug. We have an ongoing, as yet unpublished study on ketamine administration in 150 children to date (age range 2-200 months, mean 60, SD 52), the main indication being muscle biopsy. We have not yet seen any major complications. Drs Rogers and Murdoch state that emergence phenomena are not rare. In our 150 cases, 130 children, we have not encountered their child’s irritability on awakening. Ninety per cent rated their child as not being irritable, 9% had mild irritability, and 1% moderate. Doctors treating the children rated the child’s irritability as either insignificant (93%) or significant such that a benzodiazepine was required. (7%). It is likely that the younger the child, the less likely he is to have a distressing hypnagogic event. Nevertheless we have altered our protocol to give midazolam 0.1 mg/kg on induction and again at the end of the procedure. In addition we now give a smaller induction dose of ketamine of 0.5 mg/kg intravenously.

Undoubtedly attention should be paid to the child misinterpreting the examination itself as sexual abuse. In our ongoing unpublished study we routinely asked all children aged >5 years if they had any recollection of the procedure for which the ketamine was given. None had any recollection (n = 54).

The amnesic properties of ketamine make it unlikely that the child would recall, let alone misinterpret the genital examination itself. This cannot be said of the unsedated child.

One cannot cavil at Dr Sury’s sensible plea for pulse oximetry and fasting before ketamine administration. A more difficult issue however is the need for the anaesthetist to administer the drug. Virtually all sedative agents have serious, even potentially life threatening complications. It would be comforting to have an anaesthetist available...
for any deep sedation, however many hospital paediatricians have the skills required to administer such a drug providing they have experience with the drug and are familiar with its complications and contraindications.


Carbon monoxide poisoning in two children riding in the back of a van

EDITOR—A brother and sister aged 9 and 10 years were both previously fit and well noticed to be abnormally drowsy after a 40 minute journey in the back of a Transit type van. On arrival at the accident and emergency department, both children were drowsy but orientated in time and space. Both complained of headache and both had vomited. Neither had abnormal neurological signs on examination.

Arterial blood gases revealed carboxyhaemoglobin (COHb) concentrations of 24.5% and 19.7% respectively by absorption photometry (International Laboratories 482 Co Oxiometer). Both children were treated with 100% inspired oxygen at 6 litres/minute via a well fitting face mask. Symptomatic improvement was apparent at one hour and both were fully alert with normal intellectual function at two hours. Repeat blood gases six hours after admission showed COHb concentrations of less than 1% (normal range in urban non-smokers 2%). Three months after the poisoning, both children were reassessed. At this stage, there were no detectable intellectual or behavioural abnormalities noted by either parents or teachers. No neurological deficits were present.

Admission levels of COHb correlate poorly with short or long term sequelae. However, the levels measured in these children have been associated with long term neuropsychiatric morbidity in some patients. Treatment with hyperbaric oxygen is recommended if COHb concentrations exceed 40% or if there is a history of loss of consciousness, persisting neurological or intelectual deficits, or cardiovascular abnormalities. None of these features was present in these two cases and both made a complete recovery. However, the journey been of longer duration or the symptoms not recognised, a serious or fatal poisoning may have occurred.

The dangers of riding in the back of 'pick-up' trucks has recently been highlighted. In a series of 68 consecutive carbon monoxide poisonings, 20 occurred in children travelling in the back of pick-up type trucks, beneath canopies or soft covers, with defective or modified exhaust systems. In this case, the children were travelling in the back of a fully enclosed van. Subsequent inspection by the owner revealed a small crack in the exhaust system.

Carbon monoxide poisoning is a common cause of fatal poisoning. Clinicians must maintain a high degree of suspicion to recognise cases who frequently present with non-specific signs. Travelling in a vehicle with a damaged or non-standard exhaust system is a significant risk factor and travelling in the back of vans may be an additional risk for carbon monoxide poisoning.

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Quality of life in surgically palliated complex congenital heart disease

EDITOR—Casey et al's review of patients after surgical palliation of complex congenital heart disease identifies the need to assess health status in children with chronic ill health. The ability to measure 'health related quality of life' (HRQL) in those with morbidity secondary to their disease, and any interventions performed by their clinicians, is increasingly being recognised as an essential facet of total patient care.

A comprehensive identification of the core set of attributes which combine to provide an index of HRQL revealed the following key set of six: sensory and communication ability, happiness, self care, pain or discomfort, learning and school ability, and physical activity. The Feeny-Barr multiattribute health assessment uses these domains to provide a utility score of HRQL, and is a simple, concise instrument which may well be an appropriate tool to measure the overall morbidity burden in patients with chronic conditions such as cardiac patients. This instrument's practicability and validity is currently being evaluated in Nottingham and Canada.

Central nervous system tumours lack national studies

EDITOR—Thorne and Foreman raise a very important point when they highlight low entry of children with central nervous system tumours to national or international studies which for other diseases have clearly been demonstrated to confer considerable benefit for the sufferers. The Medical Research Council does not organise solid tumour protocols for children apart from the joint project on bone tumours. The United Kingdom Children's Cancer Study Group (UKCCSG), however, has a range of protocols already in operation or in the planning stage for a variety of different central nervous system tumours including primitive neuroectodermal tumour (medulloblastomas), brain stem gliomas, infants under 3 years with brain tumours, and, jointly with the International Society of Paediatric Oncology, a low grade glioma protocol. The problem is not the availability of protocols. Why paediatric oncologists, radiotherapists, and overwhelmingly neurosurgeons fail to participate in these studies is difficult to understand. The UKCCSG alone has run or actively participated in seven brain tumour studies since 1978, as many as for any tumour group. What the authors need to do along with the rest of us is to try to ascertain why we cannot persuade specialists in other disciplines to actively participate in the available studies.

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