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.1 Ketamine is an unusual anesthetic agent. It is a derivative of phenylcyclidine ('Angel Dust') and produces a dissociated anesthetic state; catalepsy 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 than in adults, unpleasant emergent phenomena are not rare in premedicated children (8% under 16 years, 24% over 16 years of age).2 In addition, ketamine may cause an autonomic response from hallucinations lasting up to a year in children.3 An antago-
sis is an important adjunct to block the increased salivation caused by ketamine, but atropine has the disadvantage of increasing the incidence of unpleasant dreams.4 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 cataleptic 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 emergent phenomena may result in the child interpreting the examination itself as sexual abuse. We would suggest that if ketamine is used with such sedative anaesthetic properties such as benzodiazepine should be added as this has been shown to reduce the incidence of emergent phenomena.6 Although ketamine allegedly does not alter airway reflexes, aspiration has been reported1 so the child should be fasted before the procedure.

RICHARD ROGERS
LINDA J MURPHY
Department of Anaesthesia
St George’s Hospital
Blackheath
London SW17 0QT


Genital examination under ketamine sedation in cases of suspected sexual abuse

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Department of Anaesthesia
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Although ketamine has a good safety record, the potentially disastrous side effects of laryngospasm and apnoeas cannot be dismissed just because they are rare. Green et al found that laryngospasm occurred once in a hundred or so cases,2 but the incidence may be greater if patient selection is poor. Whoever administers ketamine, or indeed any drug which causes loss of consciousness, must be capable of managing the predictable complications. The doctor must have skills in airway management, there must be adequate assistance, tools (artificial airways, laryngoscopes, suction, etc), drugs (suxamethonium, thiopentone, etc), monitors (heart rate, breathing, arterial oxygen saturation, etc), and a cuff or mask with which to block the airway, and the equipment must be accessible and capable of being used without delay. The protective reflexes may be able to cope with small volumes of gastric fluid but they are likely to be overwhelmed by large volumes. Gastric contents are difficult to predict and aspiration of solid matter into the lungs is particularly dangerous.

Airway outside, breathing and oxygenation are usually adequate, but this must not be assumed. Monitoring by pulse oximetry is mandatory for all patients under anaesthesia due to the risks of apnoea, arrhythmias,5 gastro-
enterologist,6 dentists,7 and paediatricians8 have all published their guidelines on safe practice for sedation and paediatricians

Dr Harari comments:

The correspondence about our article per-
tains 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 indeed 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 complica-
tions. Drs Rogers and Murdoch state that emergence phenomena are not rare. In our 150 cases, 20 children, who were asked, disconcerting phenomena occurred in 9%.

The versatility in the route of administra-
tion is the main advantage of ketamine, but if intravenous access is not gained, ketamine does not compare well with other intravenous anaesthetic drugs for use in normal children. Ketamine has a slow recovery profile and causes nausea and, because it can cause hallucinations, it would not be my first choice drug for a child who is already distressed and confused.11 There are, of course, special indications for ketamine anaesthesia such as for trauma, burns and cardiac cases, and in the intensive care unit, but away from these scenarios ketamine should only be necessary in non-critical and difficult circumstances.

When modern anaesthesia services are available anaesthetists should be responsible for anaesthesia.

M R J SURY
Department of Anaesthesia,
Great Ormond Street Hospital
for Children NHS Trust,
Great Ormond Street,
London WC1N 3JH

3 Smith JA, Sarver LJ. Respiratory arrest following intramuscular ketamine injection in a 4-year-
5 Royal College of Anaesthetists and Royal College of Radiologists. Sedation and anaesthe-


8 American Academy of Pediatrics. Committee on drugs. Guidelines for monitoring and manage-


One cannot caval at Dr Surys 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.1 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 respectively were both previously fit and well and were 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 Oximeter). 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 intellectual deficit, or cardiovascular abnormalities. None of these features were present in these two cases and both made a complete recovery. However, had 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.

R A SMITH
R J BALL
York District Hospital,
Wiganman Road,
York YO3 7EB

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.

B R EDEN
Academic Department of Paediatric Oncology, Fourth Floor, 38 Little Britain, St Bartholomew’s Hospital, London EC1A 7BE

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M R Sury

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