Prognosis for vesicoureteric reflux

The prevalence of vesicoureteric reflux (VUR) has been estimated to be 2% of the child population. In children with VUR demonstrated on micturating cystourethrography there is a tendency for the grade of VUR to improve or for VUR to disappear with time and with increasing age. VUR has been identified as a risk factor for the development of urinary tract infections (UTI) and is present in a third of young children presenting with this problem. In addition, it is a risk factor for renal scarring, otherwise called reflux nephropathy. VUR is also associated with renal dysplasia and other developmental abnormalities of the urinary tract. There is now abundant evidence for inheritance by an autosomal dominant mechanism.

Pathogenesis of reflux nephropathy

Studies have suggested that reflux nephropathy develops following UTI in very early childhood or infancy. New scars have been observed relatively infrequently; however, there are sufficient case reports of new scar formation both on intravenous urography and using 99mTc DMSA scans to accept that at least a proportion of renal scars are acquired following UTI. The probability that most scars develop in this way cannot be proved because relatively few children have serial imaging studies; in particular, few children have had imaging investigations before the first UTI. The link between UTI, VUR, and renal scarring has been confirmed by several independent groups. Smellie et al have also demonstrated a link between delay in diagnosis and treatment of UTI and the development of new renal scars.

Symptoms and signs of VUR and reflux nephropathy

VUR and reflux nephropathy are silent conditions that do not usually give rise to symptoms or signs except when complications such as UTI develop. They can only be detected by invasive tests that are not routinely carried out in healthy children and are not usually indicated during the acute phase of treatment. Thus knowledge of pathogenesis and natural history has been gleaned from observational studies and additional imaging investigations carried out on the advice of paediatricians in the belief that they are important for management. The evolution of reflux nephropathy is a slow process. Most renal scarring develops very early in childhood, but progressive deterioration of damaged kidneys may continue slowly throughout life. The relative contributions of congenital renal dysplasia, acquired reflux nephropathy, and the final common pathway of progressive glomerulosclerosis are difficult to disentangle in this group of patients. The development of proteinuria is indicative of progressive glomerulosclerosis and is a bad prognostic feature particularly when the patient also has hypertension.

Historical perspective

A review of literature in the preantibiotic era suggests that chronic pyelonephritis was a very serious condition in children and adults. Weiss and Parker described a series of postmortem cases: antecedent clinical features included recurrent fevers, presumably due to persistent untreated infection, anaemia, hypertension, growth failure, and pregnancy complications. There is evidence for a falling prevalence of this condition, which is probably due to a true reduction of reflux nephropathy because of modern medical care, particularly the treatment of acute pyelonephritis with antibiotics; alternatively the decline may represent changing fashions in disease classification. The historical aspects are discussed in detail by MacGregor who considered that VUR was crucial to the development of reflux nephropathy.

Long term outcome of VUR

In her elegant long term study Smellie describes the natural history of VUR in 226 children, 85 of whom had renal scarring modified by close medical supervision, including long term, low dose prophylaxis, advice on double micturition, treatment of intercurrent UTI, and management of hypertension. In addition 33 patients had surgical procedures (nephroureterectomy or reimplantation of the ureter, or both). Twenty (9%) had hypertension and six (4%) had chronic renal failure, two of whom reached end stage. New scars visible on intravenous urography developed in only a small proportion of the cohort and this was attributed to the benefits of careful medical supervision. The incidence of new scars is lower than in other studies, but the diagnosis of new scars is imprecise and subjective so that comparisons between studies are difficult. New scars have only rarely been seen to develop after the age of 4 to 5 years. If scars are acquired following UTI the prompt treatment of symptomatic episodes particularly in early childhood may be equally or even more important than long term preventative measures. The natural history of asymptomatic bacteriuria is not significantly different in terms of incidence of new scars, although many girls have prolonged periods of exposure to infection. The long gestation period for scar formation visible on intravenous urography makes it difficult to link new scars to specific episodes of infection.
Surgery for prevention of UTI and reflux nephropathy

Following the original observations by Hodson and Edwards, the strong association between UTI, VUR, and reflux nephropathy, surgeons developed operations to correct VUR in the belief that this would reduce the risk of recurrent UTI and prevent the development of reflux nephropathy. Although reimplantation of the ureter was successful, surgeons developed operations to correct VUR in the belief that this would reduce the risk of recurrence and reflux nephropathy.5 Although reimplantation of the ureter was used successfully to manage recurrent UTI and prevent the development of reflux nephropathy, surgeons developed operations to correct VUR in the belief that this would reduce the risk of recurrence and reflux nephropathy.5

Although reimplantation of the ureter was quite successful for elimination of VUR, there was a significant complication rate and the overall risk of UTI was altered little by successful surgery.20 Similarly, successful surgery did not benefit glomerular filtration rate or prevent new scar formation. More recently a procedure involving the suburothelial injection of Teflon or collagen has been used to correct VUR endoscopically.26 The success rate of this procedure in eliminating VUR is less than for surgery but the procedure is simpler and involves a shorter hospital stay. Long term benefits from this procedure on infection rates and new scar formation have not been evaluated. Teflon has now been abandoned because of concerns about embolisation of particles causing granulomas at distant sites; collagen has been found to be safe but benefits are not permanent and VUR may recur after a period of months or years.

Long term, low dose prophylaxis

An alternative approach to correction of VUR is the use of long term, low dose prophylaxis initially with cotrimoxazole or nitrofurantoin and later using trimethoprim. It was postulated that UTI usually develop as a result of ascending infection and that from time to time bacteria ascend the urethra and establish infection in the bladder or kidneys. A nightly dose of a broad spectrum antibiotic can sterilise the urine on a daily basis if the bacteria are sensitive to the drug chosen, reducing the chance that UTI can become established. Breakthrough infections can occur if the child’s gut and perineum are colonised with resistant organisms. Breakthrough with sensitive organisms suggests that prophylaxis has been omitted. There was evidence of effectiveness of this treatment in reducing the rate of re-infection in children with normal urinary tracts, but there are no controlled studies demonstrating that long term, low dose prophylaxis is superior to prompt treatment of UTI for the prevention of renal scarring. Thus the basis for widespread use of long term low dose prophylaxis for the prevention of scarring is based on a hypothesis that has never been proved. Increasing resistance of organisms to trimethoprim raise doubts about effectiveness as a prophylactic agent in 1999. Nitrofurantoin is bitter tasting and less well tolerated than trimethoprim but the development of resistance is uncommon.

Guidelines

Because of the concern about development of reflux nephropathy, the Royal College of Physicians (RCP) published guidelines in 1991 on the diagnosis of UTI in childhood and recommended that imaging investigations should be carried out in every child following the first UTI, reflecting the view stated in the Lancet 20 years previously.5

The working group advised that all children should have an ultrasound examination before the diagnosis of UTI is considered and further investigations before the diagnosis of UTI is considered and further delays before it is confirmed.

Practice in Sweden

In Sweden, children over 2 years old with simple UTI are not referred for imaging procedures unless there is an additional risk factor such as recurrent UTI or evidence of upper tract involvement. In spite of this practice, the prevalence of renal scarring is extremely low and there were no cases of chronic renal failure due to reflux nephropathy in a survey published in 1980, in contrast to the high incidence of VUR and reflux nephropathy in children in the UK. This has been attributed to the excellent facilities for the diagnosis of UTI in infants who are screened for UTI whenever they are febrile. The mean age for diagnosis of UTI in Sweden is during the 1st year of life in contrast to the UK where the mean age for diagnosis is around 4 years.

Need for controlled studies

Smellie and colleagues state that it would be unethical to carry out a randomised controlled study, and this may have been the view of most paediatricians at the time this study was started. However, now that the results of the two large prospective studies have failed to show superiority of either medical or surgical management, and there is mounting evidence that most scars are acquired very early in childhood, the climate of opinion may have changed. There is increasing pressure to establish the effectiveness of treatments and screening procedures both in the interest of the individual patient and in the interest of the National Health Service as a whole. Mounting costs of new and...
Cardiac causes for syncpe or sudden death in childhood

Sudden death of a child is every parent's worst nightmare. It is a rare occurrence, although individual cases or causes may receive disproportionate attention in the press. Syncpe, on the other hand, is a common symptom in childhood and is almost always benign. In a very few cases syncpe may be a clue to the presence of an underlying cardiovascular problem and may predict a risk of sudden death. Retrospective assessment of victims of sudden death sometimes reveals a preceding history of syncpe to suggest that earlier recognition of the problem might have led to a different outcome. This review considers the causes of sudden death, the causes of syncpe, and which children with syncpe need further investigation.

Cardiac causes of sudden death in infancy
Sudden death in infancy is usually either sudden infant death syndrome or caused by infection. A few neonatal or infant deaths are caused by congenital cardiovascular malformations, particularly duct dependent abnormalities or obstructive left heart malformations. Sustained tachycardia usually presents with heart failure but may cause collapse or even death. Atrioventricular re-entry tachycardia, the most common type of supraventricular tachycardia, may be difficult to recognize in the neonate. The history is often non-specific and there are few physical signs. Ventricular arrhythmias in infancy are rare but some types are dangerous. Complete atrioventricular block is usually recognized in utero or soon after birth but may cause death if unrecognized or untreated.

Sudden infant death syndrome implies absence of any identifiable cause of death. Extensive investigation has failed to demonstrate any cardiovascular contribution to sudden infant death syndrome and, despite recent reports, there is no convincing evidence that QT prolongation is implicated.
Sudden death in children with known heart disease
In previous generations sudden cardiac death most often occurred in children with end stage pulmonary vascular disease associated with unoperated congenital heart disease or in children with unoperated aortic valve stenosis. Over the years surgical repair has been performed earlier and more effectively so that those most at risk now are children with repaired heart disease. The risk seemed to be highest (5–7 per 1000 patient years) follow up after atrial repair of transposition of the great arteries. Death is probably caused by an arrhythmia and there is circumstantial evidence to implicate atrial flutter although ventricular tachycardia or ventricular fibrillation are also candidates. The risk of sudden death after repair of tetralogy of Fallot is lower (around 1.5 per 1000 patient years) and is declining. Death is probably caused by a ventricular arrhythmia, perhaps in combination with a residual haemodynamic abnormality, but late atrioventricular block is also a possible cause. Late sudden death after repair of other common cardiovascular malformations is rare, with an incidence of around 0.1 per 1000 patient years. The risk of sudden death in the presence of known hypertrophic cardiomyopathy is impossible to establish because of the lack of a denominator. The impression given by published reports from specialised referral units is that the risk is high, whereas evidence from the few population based studies does not support this. “Risk factors” have been identified but are absent in most children. “Risk stratification” is encouraged and may identify a few individuals at increased risk. However, for the large majority the risk of sudden death is low, especially in the absence of symptoms.

Syncope in children with known heart disease
Syncope or presyncope in any child after cardiac surgery or with unoperated heart disease is an obvious indication for urgent specialist evaluation. It is to be hoped that all such children are under review by a paediatric cardiologist.

Sudden death in apparently normal children
The incidence of sudden death in apparently normal children is around 1–1.5 per 1000 000 per year. Cardiovascular diagnoses first established after death include myocarditis, various types of cardiomyopathy, coronary artery abnormalities, and Marfan syndrome with aortic dissection. Sudden death associated with some types of structural heart disease, especially myocarditis or cardiomyopathy, may be related to an arrhythmia. In other children, death may remain unexplained after necropsy but the circumstances may lead to a presumptive diagnosis of a primary cardiac arrhythmia. Sudden death from previously unsuspected hypertrophic cardiomyopathy often attracts publicity but is rare. The risk in apparently normal children or adolescents is less than 1 per 1 000 000 per year. Postmortem diagnosis should lead to screening of other family members but often no further cases are identified. Hypertrophic cardiomyopathy has an underlying genetic cause and it is likely that many cases presenting in this way are new mutations. Retrospective assessment will often reveal a prodromal history of syncope. Unexpected sudden deaths that remain unexplained after necropsy are probably due to primary cardiac arrhythmias and are about 10 times as common as deaths from hypertrophic cardiomyopathy. Potentially fatal arrhythmias that would lead no trace after death include polymorphic ventricular tachycardia in congenital long QT syndrome, atrial fibrillation in Wolf-Parkinson-White syndrome, primary ventricular arrhythmias such as those described by Brugada and colleagues or Leenhardt et al, and congenital complete atrioventricular block. Retrospective confirmation of an arrhythmia is not possible unless a familial condition is recognised in a family member, but the circumstances surrounding death support a presumptive diagnosis in many cases. This group of arrhythmias also comprise most of the diagnoses made after resuscitation from out-of-hospital cardiac arrest. It is possible that some deaths attributed to “epilepsy” are in fact caused by a primary arrhythmia. Differentiation between syncope from a cardiac arrhythmia and epilepsy can be difficult.

Syncope in apparently normal children
Syncope is a frequent problem in childhood. The common causes are benign whereas some rare causes are potentially dangerous. A simple faint or vasovagal syncope is said to occur in up to 15% of the normal population at some time during childhood. Other vascular but benign diagnoses include neurocardiogenic syncope in older children, and pallid syncope or reflex anoxic seizures in younger children. The mechanisms of these may be similar with inappropriate reflex bradycardia and hypotension. In the former syncope is often postural, and in the latter a frequent trigger is surprise, minor hurt or frustration. Hyperventilation related to anxiety or behavioural disorders may produce syncope resulting from cerebral hypoperfusion, and the diagnosis will usually be apparent from the history. Psychogenic or hysterical syncope is rare—it usually occurs with an audience and does not result in injury. Studies that examine children presenting with syncope rarely identify any diagnoses with a significant risk of death because they are rare. The spectrum of underlying abnormalities in children resuscitated from cardiac arrest is, not surprisingly, very different and more malignant. Diagnoses include various types of cardiomyopathy, particularly dilated cardiomyopathy or arrhythmogenic right ventricular cardiomyopathy, and substrates for primary arrhythmias including QT prolongation and ventricular pre-excitation.

Investigation of syncope
The history is of fundamental importance in the assessment of syncope. Common but benign causes such as vasovagal syncope or hyperventilation are usually easily recognised. A history of syncope on exertion, syncope preceded by palpitations, or syncope in the presence of a family history of sudden death, congenital long QT syndrome, or hypertrophic cardiomyopathy should lead to specialist evaluation. Detection of a cardiac murmur (or other abnormal signs on examination) should also lead to specialist referral as it may be a clue to the presence of aortic valve stenosis, coarctation of the aorta, or hypertrophic cardiomyopathy. Electrocardiography is a valuable screening test in children with syncope, and may identify QT prolongation, ventricular pre-excitation, or atrioventricular block or it may be a clue to the presence of underlying ventricular arrhythmia or cardiomyopathy. Other investigations might include echo-cardiography, ambulatory or exercise electrocardiography, tilt testing, or invasive electrophysiology, but the investigative strategy depends fundamentally on the history. Tilt testing may be valuable in assessment of neurally mediated syncope with reasonable sensitivity and specificity. Treatment strategies include β blockade, vasoconstrictors, fludrocortisone, and even pacemaker implantation, but their efficacy can be difficult to evaluate and support from convincing controlled trials is lacking.

Sudden death in young athletes
A small but significant proportion of sudden deaths occur during exercise. Deaths during sports attract publicity and focus attention on the possibility of an underlying cardiac abnormality. The common structural abnormalities...
identified at necropsy are hypertrophic cardiomyopathy, coronary artery abnormalities, right ventricular cardiomyopathy, and aortic valve stenosis. 13 Unexplained cases may result from ventricular arrhythmia or atrial fibrillation in Wolff-Parkinson-White syndrome. Health screening programmes are in place for some young athletes but their efficacy has not been evaluated.

Death during sports is a rare event: estimates from the USA suggest that 5 per 100 000 young athletes (including children, teenagers, and young adults) have a predisposing condition. Health screening programmes are in place for children who die suddenly and are found to have a cardiac problem may lead to calls for screening of the general population. There is no evidence that screening for hypertrophic cardiomyopathy is either feasible or appropriate, and no evidence that either early detection or treatment in the absence of symptoms has any effect on outcome.23 To my knowledge the only prospective screening programme of normal children has been in place in Tokyo, Japan: the prevalence of hypertrophic cardiomyopathy is around 1 in 15 000,16 and children identified seemed to be at particularly low risk.17 The programme does also detect children with long QT syndrome, atrioreventricular block, and Wolff-Parkinson-White syndrome by routine electrocardiography but these problems are rare. So far it has not been possible to show that screening prevents sudden death.27

Conclusions
Sudden death in children is rare. About 10% of all deaths are sudden but most occur in children with previously recognised disease. Syncope is very common but is only rarely a clue to the presence of a significant cardiovascular abnormality. A detailed history is of paramount importance and the ECG is a useful screening test. There is no evidence at present to support screening of all children for unsuspected cardiac problems.

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Covert video surveillance: an important investigative tool or a breach of trust?

There has been controversy among professionals and the public surrounding the use of covert video surveillance (CVS) in cases of suspected child abuse. Opinion is divided as to whether it is necessary to make a “diagnosis” of child abuse and whether it is ethical and legal. CVS for documentation of apnoea by smothering was first used in 1983,3 and since then more than 20 reports have appeared.2–7 Its primary use is to detect imposed upper airways obstruction, which normally presents in small babies under the age of 1 year with an apparent life threatening event. It is a well recognised entity requiring immediate and urgent assessment. It is a dangerous form of abuse with high mortality and morbidity.8 It can be difficult to differentiate a “normal” apparent life threatening event from an imposed upper airways obstruction purely on clinical grounds. It may require multichannel monitoring of physiological function with concurrent CVS in an environment where prompt action can be taken to protect the child.

What is covert video surveillance?
Covert video surveillance is the video and audio recording of interactions between a child and his or her carer, usually the mother. It is conducted without the knowledge of the carer under strictly controlled conditions within a hospital based paediatric department. It is normally undertaken in a designated cubicule where two cameras (smaller than an electric light switch) are installed to provide coverage of the area from opposing positions. Two cameras reduce the possibility of a single camera angle being inadvertently obscured and abusive behaviour being undetected or misinterpreted. A typical CVS monitoring of a potentially life threatening situation would involve a child under 2 years of age.
age connected to a multifunction polygraph for clinical monitoring in a cubicle. This helps to maintain a fairly fixed position relative to the camera while giving the child some freedom to roam. The child is monitored from a remote site by a nurse or police officer or both. If a dangerous abusive action by the carer is observed, a separate nurse on the ward will be alerted to intervene. One of the main dilemmas is that the abusive action has to be allowed to continue long enough to obtain conclusive evidence, yet intervention has to occur in sufficient time to prevent harm to the child.

Southall et al reported 39 children (2–44 months old) who underwent CVS, of whom 36 were referred for investigation of an apparent life threatening event. Abuse was revealed in 33 with attempted suffocation in 30 patients.

What are the issues in covert video surveillance?
In 1996 the specialist advisory committee in paediatrics of the [UK] Northern Region was asked to consider the issues surrounding the use of CVS. A multidisciplinary group including professionals from health, social services, and the law produced a report and implementation plan. This group reviewed commonly expressed reservations and objections voiced by both professionals and the public.

ETHICAL AND MORAL CONSIDERATIONS

**CVS is not in the best interest of the child**
It has been suggested that the Children Act 1989 provides sufficient ways to protect children from abuse without the need for CVS, and that if the child is going to be taken into care anyway such surveillance is unnecessary. However, it is important to recognise that although there may be enough grounds for legal proceedings, courts may make a supervision order, or no order at all, unless an appreciable level of risk is shown, and the child may be returned to the parents to face the same risk. CVS in such situations can provide valuable evidence for both care and criminal proceedings. The rights of the child must be paramount and CVS can provide the vital evidence that will allow protection.

**CVS is a betrayal of trust and breach of partnership between parents and paediatricians**
Concern has been expressed that CVS involves deception and it is therefore an infringement of the civil liberty of the parent. But this is no different from the current child protection procedures except that the duration of information gathering and arriving at a decision regarding further action may be prolonged, depending on the nature and seriousness of abuse in cases of induced illness syndrome. It has been criticised on the grounds that, "in a civilised society even child abusers have procedural rights" but the report of the Jasmine Beckford inquiry clearly stated that "parental rights cannot be insisted upon by a parent who has abused these rights".

**CVS is a risk to the child**
There are concerns that to obtain conclusive evidence for civil or criminal proceedings a decision to intervene (sending a nurse into the cubicle) may be delayed and the child may suffer unnecessary harm. Legally and ethically the principle of “double effect” applies in this situation—that is, an act definable as good in terms of its object can achieve a good effect only at the risk or expense of causing incidental but unavoidable harm. Premature intervention can miss the extent of the abuse and therefore leaves a child and possibly other children at the risk of being returned to the care of an abusing parent and of suffering continued abuse or death in childhood.

**CVS contradicts the principle of openness and partnership with parents**
The Children Act developed the concept of working in partnership with parents: “The development of working in partnership with parents is usually the most effective route to providing supplementary or substitute care for their children. Measures which antagonise, alienate, undermine or marginalise parents are counter-productive”. Clearly, CVS is in direct conflict with these principles. However in the types of abuse where perpetrators are devious, partnership with parents may need to be curtailed. The suggestion that overt video surveillance of carer and child is likely to succeed is inappropriate. If the carer knows the child is being videoed, he or she will almost certainly modify their behaviour.

**CVS may cause possible harm to the parent**
If a parent is a perpetrator and is caught on videotape, the diagnosis is certain and appropriate action can be taken to protect the child and to offer treatment to the parent. However, if the parent is not the perpetrator, then they are exonerated. CVS will help to prevent the separation of the child from an innocent parent. It is noteworthy that in the 14 cases published by Samuels et al, the 12 mothers concerned received non-custodial sentences and psychiatric care as did one grandmother, although the father involved received life imprisonment.

**CVS may raise serious concerns among professionals**
Professionals may be concerned about undertaking a criminal investigation that takes them away from traditional methods of intervention and treatment. The Royal College of Nursing had serious misgivings about nurses undertaking the role asked of them in the use of CVS, but it has given advice as to the safeguards necessary. CVS should only be implemented after full discussion with all staff who need to be involved, and they must have the right to opt out. The Staffordshire protocol on implementation of CVS was commended by the Department of Health as guidance all authorities should follow if it is to be attempted in any hospital.

**LEGAL CONSIDERATIONS**
One of the most important questions to address is whether there are any legal implications of undertaking CVS. It involves a major invasion of privacy and should be conducted within a justifiable legal framework. The Children Act 1989 upholds the principle that the needs of the child are paramount. The addendum to Working together under the Children Act 1989 gives guidance to doctors stating that the welfare of the child must be of first importance and the overriding principle is to secure the best outcome for the child. The legal justification is the need to protect the welfare of the child and other children at risk. Health professionals must appreciate evidential issues and the fact that civil and criminal cases might fail due to inadequate evidence. However, it is never justifiable to use CVS simply to seek a criminal conviction. It is not easily dismissed by the court in child care matters, as the protection of the child is paramount. The criticism from courts has often been on the lack of clear guidelines and protocol for its use rather than the use of CVS itself. The usually unequivocal evidence obtained by CVS is admissible and has been accepted.

Two legal reports are noteworthy. In Regina v Khan 1996 House of Lords it is stated that “Under English law in general there is nothing unlawful about a breach of privacy”. As an occupier of hospital premises an NHS Trust is lawfully entitled to install surveillance equipment. Secondly, in DH (A Minor) (Child Abuse) 1994 1 Family
Law Reports 679, Wall J, clear guidance is given that “If a doctor considers that covert video surveillance is essential for the treatment of his patient, the doctor would be entitled to undertake this process without parental consent provided that he is satisfied that there is no risk that the patient will come to any serious harm”. In addition, the Home Office guidelines (1994) on the use of equipment in police surveillance represent official approval of such covert means by the police in relation to discovery of crime. By analogy, lawful approval can be extended to covert protection of children from serious harm.

There are legal liabilities, particularly in today’s climate of increasing numbers of claims against Trusts or health professionals. This needs careful consideration. Claims may be made by parents or carers for breach of confidentiality and trust. They may also potentially be made on behalf of the child on the basis of damage caused by delay of intervention if the child suffers additional harm by the continuation of CVS. Risk is minimised by the use of proper protocols based on professional advice, appropriate training, and experience. Conversely if a child dies or is injured because no CVS was used, and if this could have been proven to be the cause of the injury to the child, a claim could be pursued. In addition, claims based on stress and trauma of staff could be made against Trusts. Generally, protection against such claims will be afforded by approval of CVS at Trust Board level, by appropriate insurance cover by Trusts, and by operation of CVS under an agreed multiagency protocol.

PROFESSIONAL ISSUES
Professional issues concern all groups but are particularly relevant for nurses because of their direct involvement. The philosophy of paediatric nursing has changed in the past 20 to 25 years and has become more family focused and holistic. Consequently, for some, lack of openness with parents can cause considerable ethical dilemmas. The nursing role is crucial, and the principles must be understood and accepted by all involved in its operation. They must be adequately trained and fully supported.

Assisting the police with the investigation of serious crime is an accepted exception to the professional duty of confidentiality. Consideration should be given to the concerns of health professionals that they may be disciplined if their activities are considered to be unprofessional or improper. This should be dealt with by appropriate clinical decision making in accordance with a protocol and by reassurance from the individual’s professional body, and by operating within a proper multiagency protocol. It is important to note that Trusts have a vicarious liability for all employees acting within the course of their employment under agreed protocols.

There should be a clear agreement that unauthorised notification of CVS to parents and to others will be a disciplinary matter. It could also be a criminal issue if notification has been deemed to interfere with the detection of a crime. Care should be exercised in ensuring that those who volunteer to be involved in CVS are suitable and will be trained. As with any difficult ethical issue, it is wise to involve two independent and appropriate consultant paediatricians from the outset. The inappropriate and maverick use of CVS must be avoided by operating within a strict and rigorous multiagency protocol. There should be a unanimous view that all other alternatives have been addressed.

Conclusions
There has been much debate and controversy about the use of CVS in suspected cases of life threatening abuse over the past few years. Video surveillance of the public, overt or covert, has been undertaken by police over a number of years in an attempt to prevent crime. The principle of video surveillance, therefore, has been well established. However, the debate around the use and interpretation of CVS continues. We acknowledge and share many concerns expressed by various professionals. They conclude on the basis of the report produced by the Northern Region’s paediatric subcommittee that CVS is both ethical and legal, and it is acceptable only when used with a rigorous multiagency protocol to safeguard all concerned: the child and his or her family as well as the professionals.

CVS is ethical if it is necessary to protect the interests of a child and if the child is at serious risk of abuse. It is justified if it is done in the best interest of the child to protect him from serious harm and death. It is the duty of health professionals to use all available approved methods to diagnose and to treat. CVS can therefore be regarded as a justifiable assessment tool to establish a firm diagnosis or to help to exclude deliberate harm to the child. If facilities are not available locally, then the child should be referred to another centre. However, it should never be undertaken without involvement of local child protection procedures, which will include medical, nursing, social work, and police staff. Most paediatricians, given the nature and seriousness of the abuse, will agree in principle that CVS is an acceptable diagnostic tool in a small number of children presenting with an apparent life threatening event where child abuse is strongly suspected. Failure to use CVS can lead to a greater risk to life and wellbeing of the child or other children. It should be remembered that in some cases the use of CVS may also prevent the separation of children from innocent parents. A recent editorial states that CVS needs to be available as a tool that can be used for some forms of factitious illness. It must also be taken in conjunction with a full child and family assessment, upon which interventions can be based. This is vital for preventing further harm.

Unless we can devise an alternative investigative tool, CVS appears to be necessary, safe, legal, and ethical when operated under a strict and rigorous multiagency protocol in cases of life threatening abuse.

The reports of the Working Group (1993) (Specialist Advisory Committee in Paediatrics) are available from Dr Neela Shabde, Department of Community Child Health, Albion Road Clinic, Albion Road, North Shields NE29 0HG, UK.

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Prognosis for vesicoureteric reflux

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