

CHILD ABUSE — WE MUST INCREASE OUR LEVEL OF SUSPICION

by

**ALICE SWANN, MB, DCH
JOHN GLASGOW, BSc, MD, FRCP, DCH**

Royal Belfast Hospital for Sick Children,
Department of Child Health, The Queen's University of Belfast

CHILD abuse is often obvious. Occasionally, however its manifestations are not recognised or are easily overlooked. This paper describes three children to whom there was serious child abuse and in each there was a variable degree of diagnostic difficulty. The case reports are presented and comments offered which may help in the recognition and management of future cases. Several common adverse factors are referred to, the recognition of which may help to increase our suspicion of child abuse presenting with similar bizarre syndromes.

CASE 1

On the 3rd June 1979, this child, then 4 years old was admitted to a provincial hospital following a fall from a playground slide. He had a minor injury resulting in epistaxis and was discharged the following day. Two days later he was admitted again with epistaxis. On the 6th June he fell out of his cot, was not seriously hurt, but the following morning became drowsy and unsteady. On the 9th he was alert, but later that day had two generalised epileptic seizures culminating in status epilepticus. It proved difficult to abort the seizures and eventually the patient was paralysed with a neuromuscular blocking agent (d-tubocurarine) and intermittent positive pressure ventilation (IPPV) commenced. He was transferred to the Intensive Care Unit (ICU) of this hospital.

On admission the patient was very ill and collapsed looking but was no longer having seizures. The systolic blood pressure was 50 mmHg and cardiac output was poor. The ECG showed a chaotic ventricular tachyarrhythmia with little evidence of atrial activity. Cerebrospinal fluid and routine blood analysis were normal. The symptoms and signs were thought to be caused by psychotropic drug ingestion and accordingly intravenous physostigmine (5 mg in divided doses over 20 minutes) was given, but with little effect. Intravenous Practolol, 7 mg, was given and resulted in a return of sinus rhythm with improved cardiac output and more normal blood pressure.

On the 11th June the child was discharged to the provincial hospital, but the same day had two further major seizures and was readmitted to our hospital. He was conscious but irritable and aggressive; this behaviour persisted for several days.

Samples of urine taken on the 8th revealed elevated levels of imipramine (45 microg) and of its metabolite desimipramine (116 microg/l). Diazepam (153 microg/l) was also present; it had been used to try and control the seizures following his initial admission. A further urine sample on the 15th June following readmission from the provincial hospital revealed an even higher level of desimipramine (770 microg/l).

The family consisted of mother, father, sister aged 6 years and the patient. In 1975 when the patient was 3 months of age, the father sustained a total paraplegia following a serious motor cycle accident and has since been confined to a wheelchair. The family moved to England where the father's paraplegia was being managed. Subsequently, the mother developed episodes of depression and in July 1978 she was reported also to be drinking heavily. About this time she took an overdose of baclofen (Lioresil) (which had been prescribed for her husband) and gave large doses to both the patient (case 1) and his older sister, stating that she wished to kill all three of them. Between July 1978 and June 1979 the patient was noted to have numerous behavioural problems; language and speech development were also slow. It was thought that these were primarily related to domestic factors, particularly to emotional deprivation. The family returned to N. Ireland in July 1978 at which time we were informed of these events and local follow-up was initiated; the dramatic events described above took place 11 months later.

Comment

This child was given large abusive doses of the tricyclic antidepressant imipramine on at least two occasions which almost resulted in his death. The drug may be described as tablets of 10 mg or 25 mg. Following oral administration it is well absorbed, concentrations in the plasma reaching a peak within 2 to 8 hours but occasionally this may be delayed to more than twelve hours. The drug has a mean half-life of 13 hours and only a small proportion (< 2 per cent) is excreted in the urine.¹ Within a week most of the drug would be inactivated. Hence the higher urinary level found on 15th June, seven days following the first admission, strongly suggests that further amounts of imipramine had been given to the patient while he was in hospital. Close inquiry revealed that this medicine was not present in the drug inventory of the children's unit in which he was a patient at that time. It had, however, been prescribed for his mother by the family doctor shortly before the child's first minor accident on 3rd June.

It may be necessary to record visits and obtain further specimens from a child if it is suspected that drugs have been administered covertly. Such children might best be managed in an ICU where the ratio of patients to staff is more favourable; such children in an ordinary hospital ward may still be at risk from this potentially lethal form of child abuse.

CASE 2

This child was born on 5th September 1977 to an unmarried mother who first attended the Accident & Emergency Department of this hospital five weeks later, because the baby had developed a mild diarrhoeal illness. On 24th October, aged seven weeks, she attended again because on two recent occasions the child had vomited small amounts of fresh blood. On examination an erythematous lesion 5 mm in diameter, resembling a septic spot, was noted in the region of the right tonsil; there was a bruise 2 cm in diameter on the right cheek. Mother stated that she might have held the baby's chin too tightly while feeding him. The diagnosis was not clear, but recovery was rapid, no further bleeding occurred and he was discharged on 31st October. The same day the baby was readmitted with a similar history and some blood was observed in the mouth, pharynx and anterior nares. Bruising was

seen on the right fauces and on the left was a small ulcerated lesion. It was tentatively suggested that these may have been inflicted "as if by a spatula" but the truth was overlooked.

The baby was reluctant to feed, indeed he required gavage feeding as he seemed unable to swallow. A barium examination showed that swallowing movements were disordered; the passage of barium into the upper oesophagus was impaired and the mucosa within the pharynx and upper half of the oesophagus appeared to be thickened. The epiglottis was swollen and aspiration of some barium into the larynx occurred. By the 15th November (2 weeks later) the throat lesions had healed and further barium examination confirmed improvement in the swallowing mechanism and on the 22nd he was discharged

Later that same day, the mother returned to hospital with a similar history. Several small abrasions were noted within the oropharynx and an appointment was made for her attendance at a consultant's clinic the following morning. Atypical candidiasis, which had been the initial diagnosis, was again considered and an immune defect was now postulated.

However, later that same day (23rd November) she appeared yet again at hospital. Fresh cherry-red bruises were obvious on the lower gingival margin, beneath and on the upper surface of the tongue. These new lesions had not been present on examination earlier that day. In addition a moderately sized boggy tender swelling was noted on the left side of the head and the true diagnosis became obvious at last. A skeletal survey showed extensive bony injuries. In the skull there was much soft tissue swelling over the left parieto-occipital region, a long linear fracture running obliquely between the squamosal and sagittal sutures and a horizontal fracture running from this fracture line to the coronal suture. Some callus formation suggested that this had been present for several weeks. A healing fracture of the left radius at the junction of its mid and lower thirds was also found. Periosteal new bone formation was present extending up the medial aspect of the left tibia, although no actual fracture was visible.

The mother refused to cooperate in a psychiatric examination. A definite psychiatric diagnosis was not possible but she displayed some of the features of an immature personality, possibly combined with post-natal depression and psychopathic tendencies. Having repeatedly shown herself quite incapable of caring for the baby, he was fostered and after two years successfully adopted.

Comment

The true diagnosis of child abuse was made at 12 weeks of age. The injuries this infant received, estimated to be about six weeks old, dated from the time that his mother first began to attend hospital (12th October). At this time she had moved to Belfast following the child's birth elsewhere. The injury to his leg was possibly produced by tight squeezing of the leg. The injury to the left arm was likely caused by a direct blow, the pharyngeal injuries were possibly caused by repeated, firm trauma from a blunt instrument like a spoon. With hindsight it seems curious that for six weeks the true diagnosis was overlooked. The initial injuries were unusual, however, in being within the pharynx, rather than anteriorly in the region of the gingival margin, such as a tear of the frenulum. The latter is more common and

virtually pathognomonic of child abuse. This diagnosis was overlooked because the meaning of mother's repeated attendance at hospital was ignored. This type of behaviour should always alert one to this diagnosis, particularly when traumatic lesions of any sort are present.

CASE 3

This 3-month old boy was admitted in a moribund state to the ICU of this hospital on 16th January 1980. The previous day he had cried persistently and was seen by his family doctor who diagnosed "abdominal colic" and prescribed a mild oral antispasmodic. On the morning of admission he had developed left-sided seizures and when examined was exceedingly pale, had a bulging anterior fontanelle, bilateral retinal haemorrhages including a subhyaloid collection; a partial 3rd nerve palsy was noted on the right side. No cutaneous or oral bruising was found. Lumbar puncture revealed uniformly blood-stained CSF, but subdural collections were not present. A CT scan revealed a very swollen brain but excluded any form of intracranial haematoma. Skeletal x-rays uncovered no bone injuries. Although the infant was managed with IPPV and careful monitoring, he slowly deteriorated and died 8 days later. A forensic necropsy showed gross cerebral oedema and such was the friable condition of the brain that death had probably been present for several days. No other signs of injury were found.

This was virtually a single-parent family; the father who had given up his job was looking after this infant and three older sibs. He was receiving support and supervision from the local social services department. Each of the children were wards of court because of the mother's inability to cope. She was of Mediterranean origin and had often been admitted to a local psychiatric hospital because of severe depression and paranoid delusions which resulted in much pathological jealousy of her husband. Later it was revealed that the child's father had had occasional violent outbursts and once or twice had been in trouble with the police.

Comment

The presence of retinal haemorrhages, evidence of intracranial haemorrhage and cerebral oedema even in the absence of other signs of "battering," are highly suggestive if not diagnostic, of child abuse. Indeed the presence of retinal haemorrhage *per se* in children with head injury under 3 years of age is believed to be pathognomonic of this condition; the syndrome is caused by violent shaking. In other types of head injury retinal haemorrhages are most unusual.

Caffey in 1974² described what he termed "Whiplash Shaken Infant Syndrome," which results when an infant is held by the shoulders and shaken repeatedly. The weight of the infant's head and the relatively weak musculature of the neck contribute to the flailing acceleration—deceleration injuries produced during shaking. These forces may occur in different directions, hence damage may be produced in the brain at several sites. The pliable sutures and relatively soft skull with open fontanelles and ununited sutures predispose to tearing of blood vessels which are attached to more fixed structures such as the falx cerebri. Some of these injuries may resolve with minimal residual handicap to the child, but in 35-40 per cent there may be permanent neurological sequelae such as mental handicap, deafness or visual impairment. Mortality, as in this case, is thought to be high.

DISCUSSION

The cases presented with unusual clinical manifestations of child abuse and in each, recognition or acceptance of the diagnosis proved difficult. Case 2 was diagnosed only after several weeks of intensive investigation while in Case 3 the social services team, which had been involved, found it almost impossible to accept the diagnosis even following a thorough necropsy examination by an experienced forensic pathologist. Non-accidental poisoning (Case 1) is recognised also as presenting a major problem of diagnosis.^{3, 4}

Two key factors were common to each family. Two of the families were being looked after by a single parent and the family of Case 1, by virtue of the father's handicap, was in a sense similarly disadvantaged. A high proportion of families in which child abuse occurs have only one parent. Clearly where little support is provided by other family members, support by the health caring agencies may be crucial.

Each infant had a parent with a serious psychiatric illness. Among abusing parents, one third of fathers have gross personality defects; neurosis, emotional immaturity, an abnormal and/or dependent personality and subnormal intelligence are not uncommon among mothers.⁵ In a survey of 76 cases of child abuse and neglect in the Southern Health and Social Services Board, 50 per cent of the children had one parent with a psychiatric disorder or mental handicap. This is much higher than local estimates by the Northern Ireland Association for Mental Health, who calculate that approximately 11 per cent of the provincial population will at sometime be admitted to a psychiatric hospital for therapy.⁶ The combination of psychiatric illness and severe restriction of family support must surely increase the risk of abuse even further. Booklets issued by the four area boards in 1976 outlining the procedure to be followed in cases of suspected child abuse, made no reference to the risks to the young from parents who are psychiatrically ill, nor of the steps to be taken either to prevent abuse, or respond to it. Indeed we are of the opinion that not enough consideration has been given by the profession of the risks to young children in families where there is psychiatric illness. This is emphasised by the findings of a recent committee of inquiry into the death of a child by non-accidental drowning at the hands of his very disturbed mother.⁷

In two of the cases social service departments were already involved with the families. Indeed in Case 1, child abuse had taken place about a year previously when the family were residing in England. With regard to the family in Case 3, it is disturbing that in spite of very close support, fatal abuse supervened. It is perhaps more worrying, however, that because of supervision being provided by local social workers that this team found it difficult once abuse occurred to accept the true diagnosis. It should be recognised that community support of this type may occasionally fail to prevent abuse or its recurrence. It must be admitted also that in Case 1, even the general level of hospital surveillance failed to prevent a disturbed, plausible and devious mother from administering drugs to her child in doses sufficient to produce serious, near-fatal symptoms while in a hospital ward.

CONCLUSION

These cases were selected to illustrate some of the diversity and difficulty in diagnosis of child abuse. This selection was made purely on the basis of a bizarre or

unusual presentation, which was thought worthy of comment. It is curious, however, that in each instance there was a striking interplay of adverse social factors, a single-parent family, and psychiatric disturbance in one of the parents with involvement of the social services department. A greater level of suspicion is still necessary in order to reduce the morbidity and mortality associated with child abuse.

SUMMARY

Three unusual cases are described which illustrate some of the diversity of presentation and difficulties in diagnosis of child abuse. The first is of non-accidental poisoning, the second presented with unusual oral and pharyngeal injuries and occult fractures and the third was a child who died of intracranial bleeding following severe shaking, but in whom there were no signs of overt trauma. In each case, adverse domestic and psychiatric factors were prominent; local social service departments were already concerned with two of the families. A review of the investigations and management of each case suggest that levels of suspicion are still too low among both the medical and social work professions. It must be emphasised that infants of mothers with serious psychiatric disorders are particularly at risk. Psychiatrists as well as family doctors and paediatricians have a definite role in prevention of child abuse.

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ADDENDUM

Since submission of this paper we have seen a further infant, aged 6 weeks, in whom similar findings to Case 3 were present. There were retinal haemorrhages and subarachnoid and extensive intracranial bleeding and several small bruises were present on the child's neck and upper thorax, greater on the left side than on the right, perhaps indicating that it had been grasped tightly and severely shaken by a right handed person. The child died a few days later. The mother admitted that this is what had taken place.