J Forensic Sci, Oct. 1976, Vol. 21, No. 4

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Several Unusual Cases of Child Abuse

The authors reviewed all deaths which were known or suspected to have resulted from child neglect or abuse in New Mexico during 1974 and 1975. Nine cases were identified, representing a wide spectrum of patterns of maltreatment of children in several racial and cultural groups. Children of Indian, Spanish-American, Anglo, and Negro descent are included, ranging in age from 3 months to 5 years (see Table 1). Some died as the result of a single traumatic episode, while others were victims of multiple, repeated episodes of abuse. The cases are similar to those presented in previous large series in that most injuries resulted from blunt trauma and were inflicted by parents or close relatives of the victims [*1–4*]. The four cases selected for discussion present unusual variations in the typical pattern of child abuse; one death was due to complications resulting from medical neglect, an occurrence not uncommonly seen in isolated areas of this rural state.

Case Reports

Case 1

This 3-year-old Indian female was brought to a rural hospital near an Indian reservation by her guardian who claimed that the child had been quite clumsy and had difficulty maintaining her balance. She was comatose at that time and died 6 h after admission.

Multiple contusions and lacerations in various stages of healing were scattered over the head, trunk, and extremities. The lips were diffusely swollen and discolored, and a laceration extended through the full thickness of the anterior portion of the tongue. A laceration extended across the left posterior buccal mucosa to the soft palate, beneath which was a fracture of the left maxilla with medial and anterior displacement of a major portion of the left hard palate. A fracture through the full thickness of the left angle of the mandible was also found. Microscopic examination revealed partial healing of both fractures.

The history of poor coordination and balance prompted an examination of middle ear structures. Purulent material filled the left mastoid air cells, and the ossicles on that side

Presented at the 28th Annual Meeting of the American Academy of Forensic Sciences, Washington, D.C., 19 Feb. 1976.

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TABLE 1—*Summary of nine cases of child abuse.*

Case	Age/Sex	Racial or Ethnic Group	Autopsy Findings
1	3 years/female	Indian	fractures of maxilla and mandible with buccal laceration multiple contusions, abrasions, and lacerations generalized sepsis
2	12 months/male	Caucasian	multiple contusions and abrasions subdural hematoma intrahepatic portal vein thrombosis
3	6 months/male	Spanish-American	multiple fractures of calvarium and cerebral lacerations
4	5 years/female	Caucasian	multiple contusions and abrasions hypertrophic burn scars mesenteric laceration and hemoperitoneum
5	3 years/female	Negro	multiple contusions and abrasions subgaleal, subdural, and subarachnoid hemorrhage
6	3 months/female	Negro	38% second and third degree thermal burns bronchopneumonia
7	2 years/female	Caucasian	multiple contusions, abrasions, and fractures subdural hematoma
8	2 years/male	Negro	multiple contusions, abrasions, and fractures liver lacerations and hemoperitoneum
9	4 months/male	Caucasian	emaciation multiple healing fractures

were immobilized by cellular scar tissue which contained variable numbers of chronic inflammatory cells but no neutrophils.

Septic arthritis was found in the left elbow and right hip. In the elbow the exudate had eroded through the joint capsule into adjacent soft tissues, while in the hip the joint capsule remained intact but a large abscess was discovered in the adjacent psoas major muscle. Cultures of the elbow grew Group A β-hemolytic *Streptococcus.* Further manifestations of generalized sepsis included bilateral bronchopneumonia and acute suppurative thyroiditis.

This case is unusual in several respects. The maxillary fractures and buccal laceration may have resulted from intra-oral trauma with a blunt object; the presence of lip contusions and the laceration of the tongue indicate that at the least the child received severe external blunt trauma to the mouth. She also had a healing denudation of one labium minus, indicating again the possibility of penetrating blunt trauma.

The child died with septic complications occurring in the absence of medical treatment. The terminal sepsis probably resulted from secondary infection of the buccal laceration, with hematogenous spread of the infectious agent to the elbow and hip, mastoid air cells, lungs, and thyroid. It is possible that sepsis was secondary to the middle ear infection; however, this was felt to be unlikely because of the lack of acute inflammatory changes in the middle ear.

In summary, this case represents a group of quite unusual injuries complicated by gross medical neglect, with death probably resulting from infectious complications of the original trauma.

Case 2

This 12-month-old Caucasian male was dead on arrival at the emergency room in one of New Mexico's smaller communities. He was brought in by his mother who said that the child was quite clumsy and often fell off the car seat onto the floor, sometimes hitting the dashboard.

The autopsy revealed evidence of multiple, repeated traumatic episodes. Multiple contusions of varying ages were scattered over the head, trunk, and extremities, and there were several partially healed rib fractures. The cause of death was a small subdural hematoma, located over the left parietal lobe and weighing 15 g. Multiple subgaleal contusions were seen, four of them distributed in linear array across the forehead in a pattern consistent with knuckle or palmar injuries; it was felt that these lesions may have been associated with the blow causing the fatal subdural hematoma.

The unusual, and as yet unexplained, finding in this case was in the liver, which contained infarcts of Zahn involving approximately half of the hepatic parenchyma. The capsular surface was divided into three distinct areas with sharp, irregular boundaries. The surface of the left lobe exhibited red-purple discoloration and was somewhat softened, while most of the surface of the right lobe had a normal color and firmness. Between these two areas was a sharply demarcated zone with discoloration and softening intermediate between the extremes described above. These zones of red-purple softening extended through the full thickness of the hepatic parenchyma, as sharply demarcated within the interior as they were on the surface.

Most of the larger branches of the portal vein within the discolored areas were occluded by thrombus. The extrahepatic segment of the portal vein was patent, as were the inferior vena cava and branches of the hepatic veins. No abnormalities were found in either the abdominal vascular system or the organs drained by the portal venous system. Aside from a few contusions on the anterior abdominal wall, there was no evidence of abdominal trauma. The spleen was not enlarged, and there was no ascites.

Microscopic examination of the liver revealed occlusion of large branches of the portal vein by partially organized thrombi; portal veins within triads were patent. Centrilobular congestion was seen in the left lobe, resulting in sinusoidal hemorrhage and minimal necrosis of hepatocytes around central veins. In the right lobe were no significant histologic changes other than a few areas of mild centrilobular congestion; the zone of intermediate discoloration displayed changes similar to those described in the left lobe, but of decreased severity.

To our knowledge, portal vein thrombosis, either intra- or extra-hepatic, has not been reported in association with the syndrome of child abuse. Such thrombosis is quite unusual in childhood, the most common causes being thrombosis secondary to umbilical vein catheterization and pylephlebitis following abdominal suppuration or umbilical infection of the newborn [5-7]. Other causes, which are usually associated with adults, include cirrhosis of the liver, invasion of the portal veins by hepatocellular carcinoma, and carcinoma of the pancreas growing into the intrahepatic portal veins. In addition, intrahepatic portal vein thrombosis has been reported as an autopsy finding in adults with idiopathic portal hypertension [8]. All these possible etiologies were excluded in this case. The neonatal period was apparently uneventful; review of the child's hospital chart revealed no record of neonatal sepsis, omphalitis, or umbilical vein catheterization. There was no evidence of liver disease other than that already described or of inflammatory disease in the abdominal viscera that might have led to pylephlebitis. No intra-abdominal traumatic injuries could be found.

It was concluded that these hepatic lesions did not cause or hasten the child's death, as only approximately half the liver was affected and only minimal hepatocellular damage was seen in the most severely involved areas. However, the cause of the liver disease remains undetermined.

Case 3

The third case is that of a 6-month-old Spanish-American male. His father, who had been inhaling paint thinner immediately prior to this episode, telephoned his wife and threatened to kill their children. His wife was hospitalized with injuries he had inflicted on her a few days earlier. Soon after the phone call, he grabbed the infant by his feet and flung him twice against a coffee table with all his might; he did not harm any of his other children. The father freely admitted all of this, both immediately after the act and at his subsequent murder trial.

The autopsy revealed multiple disconjoined skull fractures involving virtually all portions of the cranium, accompanied by multiple areas of fluctuant subgaleal hemorrhage. Two cranial sutures had been traumatically separated, and brain substance had herniated through some fractures into the subgaleal space. Multiple lacerations were scattered over both cerebral hemispheres. Fractures of several ribs and the right ulna were also found. Microscopic examination revealed that all of these injuries were of very recent origin; hemorrhage without an inflammatory response was seen in all lesions examined. There no gross or microscopic evidence of previous traumatic episodes or of parental neglect found in the remainder of the autopsy.

This child's death contrasts with the usual single-episode type of child abuse where the homicidal act is usually not premeditated and very often is not intended to be fatal, for example, when a father throws an object at an ill child who has been crying incessantly and inadvertently lacerates the spleen or liver. The severity of the injuries is unusual but not without precedent [2]. The authors have seen one previous, similar case in which an infant suffered severe head injuries when his mother swung him by his heels from wall to wall after her husband had deserted her the previous evening. She was linked to the crime by the presence of blood and brain substance on her shoes, which had left tracks leading back to the child's body.

Case 4

This 5-year-old Caucasian female, recently bathed and wearing spotlessly clean clothes, was brought to the emergency room of a small New Mexico community hospital with complete rigor mortis. Her mother said the child had become entangled in a dog's leash and had died soon thereafter. A year before, the child had been treated for extensive second and third degree thermal burns on the perineum and legs; at that time child abuse was suspected by her pediatrician but could not be proved.

The autopsy revealed multiple contusions and abrasions in varying stages of healing, with numerous hypertrophic burn scars. The cause of death was exsanguination from a large mesenteric laceration; the peritoneal cavity contained 600 ml of blood.

This pattern of injury is not in itself unusual; the difficulty in the case was associated with attempts to date the mesenteric tear microscopically and to specify the manner of death. Beneath the layer of recent hemorrhage in the mesenteric tear was a zone of granulation tissue, indicating that the most recent abdominal trauma had reopened an earlier, partially healed laceration. This finding made it impossible to state with certainty that the terminal hemorrhagic episode was due to severe blunt trauma to the abdomen; although severe trauma had been undoubtedly responsible for the original healing laceration, it was possible that a much milder blow, possibly accidental, had reopened the fragile wound repair. It was thus possible that the child's death had been accidental, with minor trauma leading to hemorrhage from an earlier nonfatal injury.

Despite the uncertainty regarding the terminal episode, it was decided to specify the manner of death as homicide. The child's death was a consequence of the severe trauma causing the original laceration, either directly if intentional abuse caused reopening of the tear, or indirectly if accidental injury led to the fatal hemorrhage.

Summary

All childhood deaths which occurred in New Mexico during 1974 and 1975 were reviewed. Nine fatal instances of abuse were identified representing the entire spectrum of physical abuse: neglect, abuse in a single episode of injury, repetitive abuse, or sexual abuse. Several cases are summarized. These are unusual either in the distribution of pathologic findings or in the problems encountered in court presentation.

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