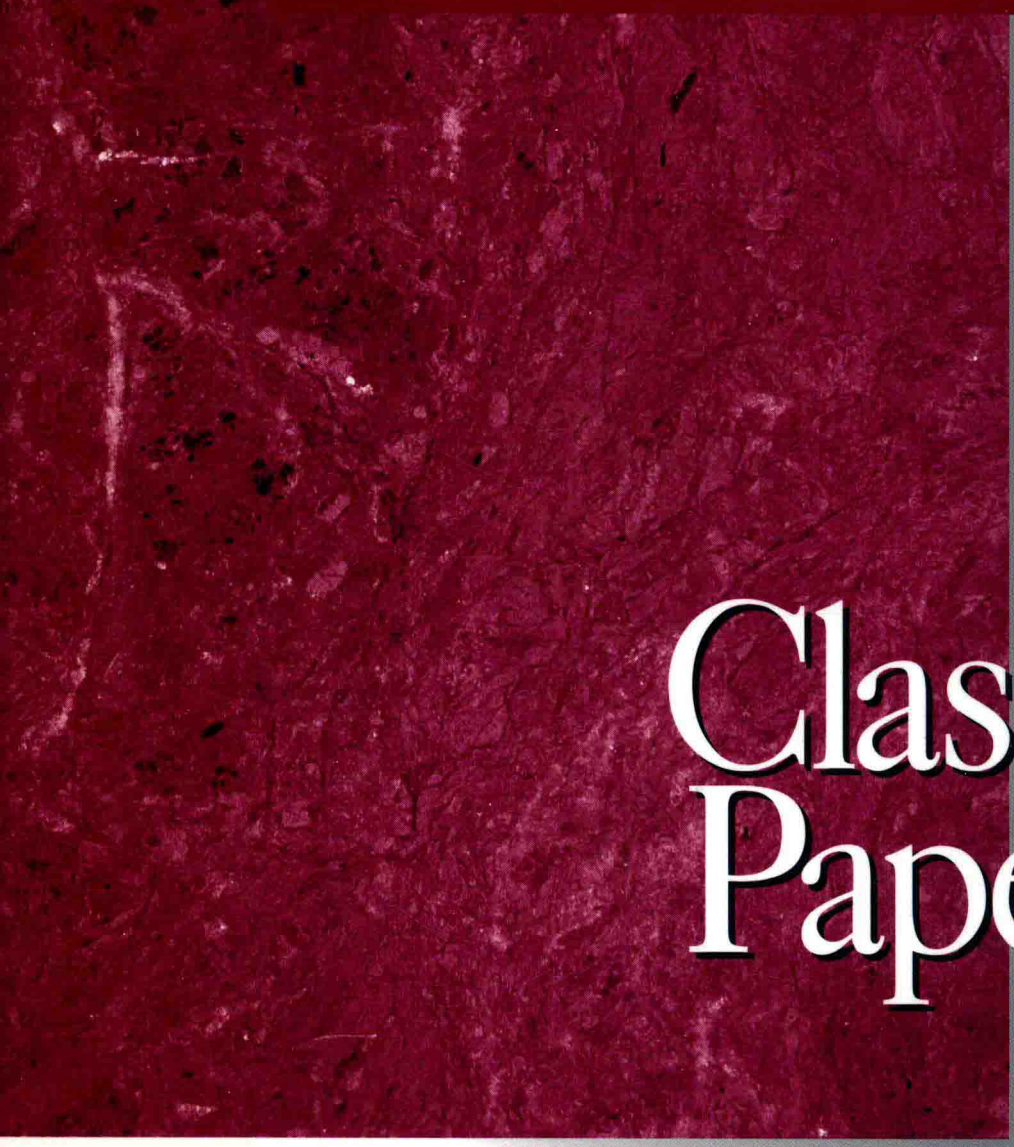
Anne Cohn Donnelly & Kim Oates
Editors



Classic Papers in Child Abuse

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Classic Papers *in* Child Abuse

This volume is dedicated to C. Henry Kempe and Donna J. Stone, two pioneers in our collective efforts to understand and prevent child abuse, and two important mentors.

Introduction

What makes a classic paper in child abuse? Is it the number of times scholars refer to it in their own writings? Is it one that has influenced the way practitioners work? Perhaps, it is one that has led to a change in policy and practice at a national or even an international level.

Most of us would be able to think of at least one or two published book chapters or articles that have had a major influence on our thinking or understanding and that may have changed the way we work. If a large group of professionals shared their opinions about papers that had influenced them, a number of papers would be regularly mentioned. If we also looked at how often the papers the professionals mentioned were referenced, or cited, in the child abuse literature, then we would end up with some degree of consensus about influential or "classic" papers in child abuse.

This is how we arrived at the 25 classic papers in this volume. First, we surveyed a group of people in leadership positions in child abuse research or clinical work to tell us about the journal papers or book chapters they felt had been most influential to them and to the child protection field as a whole. Once this list was generated, we conducted a larger, international survey of professionals, asking them to rank the papers in what they believed was their order of importance and influence. Finally, we compared the views of this group with the actual number of times these papers had been cited in the literature by searching the Science Citation Index and the Social Science Citation Index for the previous 10 years (Oates & Cohn Donnelly, 1997).

Obviously, the list of papers presented here is not exhaustive. Readers may think of other papers that may have had a major influence on their thinking or on that of others. Some examples include Fontana's (1963) early descriptions of the medical aspects of child abuse, de Francis's (1969) work on child protection, Elmer and Gregg's (1967) study of development following abuse, and Besharov's (1974) early work, which influenced child protection legislation and Fraiberg's work on infancy.

The 25 papers in this volume cover work from 1946 to 1989. They represent the consensus of a large number of professionals about what are the classic papers in child abuse, chosen from among the highest-ranking papers in the professional and citation surveys to give a balanced view of the entire spectrum of abuse: emotional abuse, neglect, deprivation, sexual abuse, and physical abuse. Some papers, such as Klaus's (1972) paper on the importance of maternal attachment, are not specifically about abuse at all but were highly ranked by professionals because of the impact they had in helping us to understand the larger picture of factors that may contribute to or reduce abusive behavior.

Because these papers in general represent the early thinking and early methodologies used to explore child abuse, we wanted to assess their relevance today. To that end, we asked several dozen of our colleagues—none of whom have works represented here, to restudy several papers each and to report on why

they believe these papers were so influential in their day, why the papers continue to be influential today, and what cautions they have in using the contents of these papers in today's work. The remarks we gathered from our colleagues are woven into commentaries by the editors before each paper (see List of Commentators).

Although the papers in this volume are arranged in chronological order to show how the evolution of understanding and thinking about child abuse has occurred, it is worth mentioning those papers that appear to have been the most influential of all. Eight papers appeared in the top fifteen in the international survey of professionals and were among the 15 most frequently cited papers. These are: "Multiple Fractures of the Long Bones in Infants Suffering From Chronic Subdural Hematoma" (Caffey, 1946); "The Battered Child Syndrome" (Kempe et al., 1962); "Munchausen Syndrome by Proxy" (Meadow, 1997); "Child Abuse and Neglect: The Myth of Classlessness" (Pelton, 1978); "The Child Sexual Abuse Accommodation Syndrome" (Summit, 1983); "The Prevalence and Incidence of Intrafamilial and Extrafamilial Sexual Abuse Among Women" (Russell, 1983); "Four Conditions: A Model" (Finkelhor, 1984), and "Impact of Child Sexual Abuse: A Review of the Research" (Browne & Finkelhor, 1986).

Why bother to make a collection of classic papers? Few people would have the time to locate these papers individually, making their collection in one volume a useful resource. Just keeping up with the current literature is a major problem recognized by child protective service workers who, although they realize that keeping up would be relevant to their work, often feel that they do not have the time to be familiar with all the literature (Fryer, Poland, Bross, & Krugman, 1988). Although the literature is extensive, not all of it is that relevant to many who work in the area, so that a collection of the classic papers, recognized by a group of peers as being highly relevant, can be a valuable resource.

A collection of the most influential child abuse papers published to date has much to teach. We can be encouraged by seeing how far we have come and how much we have learned since those early descriptions of abused children started to shatter society's complacency that all children have happy, carefree lives. The papers will also challenge us to see that the same problems persist and that although we understand them better, there is still a long way to go before we have a society where all children are truly valued and adequately protected.

But most of all, these papers are highly relevant today. When we re-read these papers, we were impressed that their core insights are just as relevant to today's practice as when they were written.

For those starting to work in the area, these papers provide a wise and thoughtful introduction to the entire scope of child abuse and neglect. To those who are experienced, the papers are a salutary reminder of the importance of learning from past experience as we move into the future.

Many people helped in the production of this volume. Our special thanks go to our friends and colleagues around the world who took part in the survey that resulted in the choice of these classic papers; our colleagues who provided the material for the commentaries on each of the papers; the publishers of the original papers for permission to reprint them; and most important, all of the original authors of these classic papers, who played such a vital role in our understanding of the very complex and compelling issue of child abuse. We also gratefully acknowledge the indispensable assistance of Wendy Nelson as well as that of our Sage colleagues Terry Hendrix, Kassie Gavrilis, Nancy Hale, and Sanford Robinson.

Anne Cohn Donnelly and Kim Oates

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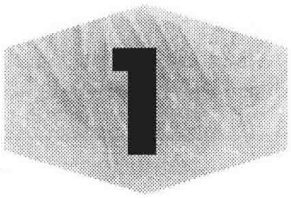

Multiple Fractures in the Long Bones of Infants Suffering From Chronic Subdural Hematoma

JOHN I. CAFFEY ***1946***

Re-reading Caffey's 1946 paper, "Multiple Fractures in the Long Bones of Infants Suffering From Chronic Subdural Hematoma," the diagnosis today seems so obvious. In the six cases documented, Caffey describes children who have subdural hematomas, retinal hemorrhages, multiple fractures of different ages (including spiral fractures), periosteal elevation, and metaphysical chip fractures. In some of these cases, fresh bruising and new fractures appeared after the child's subdural hematoma had been treated and the child discharged from hospital.

Give a description like this to any pediatric intern or medical student today, and you would expect the diagnosis of child abuse as the most likely cause. But, over 50 years ago, the medical profession did not diagnose child abuse. The importance of Caffey's paper is that for the first time he asked "why" and documented a series of puzzling cases. "For many years we have been puzzled by the roentgen disclosure of fresh, healing, and healed multiple fractures in the long bones of infants whose principal disease was chronic subdural hematoma," he wrote, but "in not a single case was there a history of injury to which the skeletal lesions could be attributed."

In two cases, it was reported that injury to the infant had been denied, and, in one case, after being shown the roentgen findings, the mother altered her story. In one case, Caffey raised the question of ill treatment because "the infant was clearly unwanted by both parents."

This paper is an important example of careful observation and documentation of what was then an obscure and unexplained combination of injuries. Caffey had the insight to suggest that the fractures in the long bones may have been caused by the same traumatic forces that were responsible for the subdural hematomas, and although he implied that injury—possibly caused by parents—may have been a possibility, the world of 1946 was not yet ready to accept that parents could deliberately damage their infants in this way.

Now, well over a half century later, the cause of the trauma is no longer a mystery. Caffey's paper was the beginning of the identification of the phenomenon no one wanted, or was able, to admit existed—the severe physical abuse of children by those responsible for their care and nurture.

Fractures of the cranium are not infrequently associated with infantile subdural hematoma, but fractures in the long bones have rarely been reported as complications of this intracranial lesion. An old fracture of the radius is mentioned by Sherwood[1] in his fifth case. Ingraham and Heyl[2] demonstrated greenstick fractures roentgenographically in the radiuses and ulnas of both forearms of one infant (Case 4) in whom there were neither clinical signs of fracture nor history of injury. Dr. Ingraham has written me that in his extensive experience with more than 100 cases of infantile subdural hematoma, fractures were also found in the humerus of one patient, in the femur of another, and in six ribs of a third.[3]

For many years, we have been puzzled by the roentgen disclosure of fresh, healing, and healed multiple fractures in the long bones of infants whose principal disease was chronic subdural hematoma. The subject of this paper is the description of six such patients, who exhibited 23 fractures and four contusions of the long bones. In not a single case was there a history of injury to which the skeletal lesions could reasonably be attributed, and in no case was there clinical or roentgen evidence of generalized or localized skeletal disease which would predispose to pathological fractures.

CASE REPORTS

Case 1. H. D., male, was born March 13, 1925, after a normal gestation and labor; the birth weight was 8 pounds. He gained and developed normally on whole milk formula.

A purulent discharge from the right ear began at 5 months and continued for 2 months. At 7 months, there was a single convulsion which lasted for one-half hour, after which the infant was weak and listless for 3 days and strabismus with stare developed. During this period, fever was present and vomiting was frequent. The mother, who had been with the infant continuously, had not observed injury to the head or extremities. Physical examination disclosed a tense bulging anterior fontanel, internal strabismus, and exaggerated deep reflexes. There were no signs of meningeal irritation. The bones of the left forearms were thickened to palpation, and this finding raised the question of an old fracture with callus. Roentgenograms of the extremities were not made at this time. Forty-five cubic centimeters of cerebrospinal fluid were withdrawn from the lumbar subarachnoid space; the pressure was increased, but the fluid was normal chemically and microscopically. Following lumbar puncture, the signs and symptoms disappeared; the patient was sent home after 3 days, with the diagnosis of hydrocephalus of unknown origin.

Two weeks later, the patient began to vomit, and the bulge over the fontanel reappeared; 35 cc. of lumbar cerebrospinal fluid were found to be crystal clear and normal microscopically and chemically. During the next 5 weeks, 30 to 40 cc. of normal cerebrospinal fluid were withdrawn during each of 12 lumbar punctures. At 9 months of age, subdural punctures yielded 25 cc. of bloody fluid from the right angle and 15 cc. from the left angle of the anterior fontanel.

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Roentgenograms of the skull after the injection of air into the subdural space demonstrated a large cavity which extended over both cerebral hemispheres but which did not appear to communicate with the subarachnoid or ventricular spaces. The patient was discharged December 24 to spend the Christmas holiday at home.

On December 28, the infant was re-admitted for further study and treatment. The 4-day sojourn at home had been uneventful, and re-examination showed that the fontanel was depressed and widely open. A weakness of the right side of the face was noticeable when the patient was crying. The therapeutic lumbar punctures and subdural punctures were discontinued. On January 6, after 9 days of continuous hospital residence, swelling of the right wrist was detected—slight dorsal swelling with ecchymosis and tenderness. No unusual trauma had been observed by any of the hospital attendants. Roentgenograms showed a fresh fracture of the right radius and old fractures of the left ulna and the right femur. The fractured bones were well developed and well mineralized; there were no roentgen signs of scurvy. The fractured radius healed promptly, and at 3 years, the patient appeared to be normal, showing no sequels of the subdural hematoma or the multiple fractures.

Case 2. J. M., a white male born after normal gestation and labor on September 11, 1931, weighed 6 pounds. Two blood transfusions were given during the neonatal period for the treatment of hemorrhagic disease of the newly born. He was breast-fed for 1 month and then fed from a bottle until the 11th month. Cod liver oil was given after the 5th month, and 1 ounces of orange juice were taken daily after the 6th month. Gain in weight was slow; at 1 year, he weighed only 16 pounds.

During the 7th month, the gums became swollen and hemorrhagic. In the 10th month, blood was found in vomitus and feces. At the same time, bluish and black spots appeared on the skin of the face and arms. The patient is said to have taken 1½ ounces of orange juice daily during the 3 months prior to the onset of these hemorrhagic manifestations.

A few weeks later, during the 10th month, the infant suddenly became cyanotic and rigid and remained so for one-half hour. Examination at this time in another hospital disclosed scattered petechiae in the oral mucous membrane and ecchymoses on the skin of the face, arms, and trunk. The left side of the face and the left arm were weak. Numerous hemorrhages were found in the ocular fundi. The subdural space was aspirated through the left side of the anterior fontanel and yielded bloody fluid. At this time, the clotting and bleeding times of the blood were normal, and the blood platelets were normal in number. Hematuria was not demonstrated in several examinations of the urine. Roentgen examination of the extremities was said to have shown some osteoporosis but no changes diagnostic of scurvy and no fractures.

After discharge from the first hospital, convulsions recurred frequently at home, often three and four times daily, until the 15th month, when he was admitted to a second hospital. In examinations there, the patient appeared to be undernourished and pale, and there were numerous old ecchymoses on the head and thighs. The anterior fontanel was still widely open, and mental development was retarded. The ocular fundi were normal. The bleeding and clotting times were not increased, and there were 135,000 platelets per cu. mm. of blood. Fluid, withdrawn from the lumbar subarachnoid space, was yellow and contained 136 erythrocytes per cu. mm. In pneumograms of the skull, the lateral ventricles were dilated and asymmetrical and the cranial sutures were widened. The blood Wassermann test gave a nonsyphilitic reaction. After a hospital residence of 1 month, the patient was discharged improved.

After only 4 days at home and at 16 months of age, the infant was returned to the hospital because of tenderness of the left leg, which was said to have appeared suddenly without injury 4 days previously, on the same day that he had

been discharged from the hospital. After re-admission, the left leg was found to be hot, swollen, and tender from the thigh to the ankle. There were purpuric patches on the skin over the left knee and ankle. Roentgen examination disclosed swelling of the soft parts of the left leg but no signs of scurvy or fracture in the bones. Two weeks later, a shell of ectopic subperiosteal bone had formed around the lower three quarters of the shaft of the left femur, but there was still no evidence of fracture.

At 19 months of age, he was re-admitted to the same hospital because of difficulty in moving arms and legs. The skull was trephined, and the diagnosis of subdural hematoma was confirmed.

Convulsions recurred at 22 months, and the left arm became partially paralyzed at the shoulder. Roentgen examination of the long bones showed a complete fracture in the lower third of the left femoral shaft, with overriding of the fragments and a large mass of heavily mineralized callus. At the proximal ends of both humeri, subperiosteal shells of bone surrounded the terminal segments of the shafts. There were no roentgenologic signs of healed or fresh scurvy in the metaphyses.

At 27 months, the patient was admitted for the first time to the Babies Hospital. The head was enlarged, and there was limitation of movement of the extremities, more pronounced on the right side. The ocular fundi were pale. Examination of the blood, urine, and cerebrospinal fluid resulted in normal findings. Pneumograms of the brain disclosed marked dilatation of the ventricular system; there was no evidence of cranial fracture. In roentgenograms of the extremities, the left femur was found to be thickened and deformed at the site of the earlier fracture. The distal end of the left humerus was fragmented and surrounded by externally thickened cortex, and the shaft of the left ulna was cloaked in heavy cortical layers. The findings in the right humerus were similar to those at 22 months, but there was a fresh fracture of the distal end of the right ulna with slight angulation.

Case 3. J. B., a female Negro, was born March 10, 1933, after a normal pregnancy and labor. The birth weight was 5 pounds. She was fed from the breast for 2 months, after which a bottle was given with daily cod liver oil and orange juice. She developed normally.

At 8 months, she had a generalized convulsion and remained unconscious for several hours. After admission to another hospital, two convulsions occurred during a residence there of 6 days. Convulsive seizures recurred at home; after 4 days, the patient was brought to the Babies Hospital. She was found to be poorly nourished (6.7 kilograms) and short (70 cm.), with large head (43 cm. in circumference). The fontanel was not bulging, and there were no signs of meningeal irritation. Multiple fresh hemorrhages were seen in each ocular fundus. Bloody fluid under increased pressure spurted from the needle inserted into the lumbar spine; this fluid was yellow after centrifugation. Subdural punctures on both sides of the anterior fontanel yielded blood-tinged fluid, which remained yellow after centrifugation. Kahn's test on the blood and cerebrospinal fluid resulted in nonsyphilitic reactions. The urine was free of blood in several examinations. Subdural fluid was withdrawn at weekly intervals in the hospital, and although the fluid remained blood tinged, the patient became brighter and more active. After 1 month, the infant was discharged.

Four days later, the mother brought the baby back to the hospital because the right leg had suddenly become tender and swollen and bruises had appeared under the left eye and in other parts of the body. The mother denied that any injury had occurred during the 4 days since discharge from the hospital. Movement in both lower extremities was found to be limited, and the right leg was swollen and tender. There was a large ecchymosis on the left side of the face just beneath the orbit, and numerous petechiae were scattered on the abdominal wall. Several fresh hemorrhagic foci were found in the ocular fundi. Lumbar subarachnoid fluid and subdural fluid, withdrawn from the lateral an-

gles of the anterior fontanel, were discolored with blood. Roentgenograms of the extremities disclosed that the bones in the arms were normal, but five fractures were visible in the shafts of the bones adjacent to the knee joints—one in the distal end of each femur, one in the proximal end of each tibia, and one in the right fibula. These bones were well mineralized, and there were no signs of scurvy in the shafts, the metaphyses or in the epiphyseal ossification centers. In roentgenograms made 18 days later, heavy cortical thickenings surrounded the fractured shafts. The skull was not examined roentgenographically.

The patient remained in the hospital 25 days. The swelling and tenderness gradually subsided and disappeared. There were no later observations.

Case 4. R. M. S., female, was born December 3, 1942, after a normal gestation and labor; she weighed 6 pounds.

Convulsions began at 1 month of age and recurred frequently thereafter. A "blood clot," presumably a subdural hematoma, was removed from the cranial cavity during the 6th month at another hospital. Following the operation, the convulsions ceased, and the vision seemed to improve.

At 12 months, pain and tenderness were first noted in the left arm; these manifestations disappeared after 2 weeks, and they did not recur. The mother stated that injury had not occurred at any time. Examination at another clinic disclosed that the movements of the left arm were limited and painful. The left arm was swollen above the elbow, and extension of the elbow was limited to 165 degrees; flexion was normal. Pronation and supination were limited to 20 degrees.

The patient had resided in hospitals during most of the first year and presumably had received a normal diet with adequate vitamin C. Development was retarded. She failed to sit up or stand alone during the first 15 months of life.

At 15 months of age, she was admitted to the Babies Hospital for the first time; she appeared well nourished. There was a long, healed surgical scar in the scalp; the left arm was flexed at the elbow and hung motionless except when touched. Both active and passive movements of the left arm were painful. Microscopic and chemical examinations of the blood and urine were normal. Kline's test on the blood gave a nonsyphilitic reaction. Clear cerebrospinal fluid withdrawn from the lumbar spine was normal microscopically and chemically. The ocular fundi were pale.

In pneumograms of the skull, the cerebral ventricular system was found to be dilated, and there was considerable irregularity in the density of the parietal bones in the sites of earlier craniotomies, which were done during the 6th month of life. Roentgenograms of the long bones disclosed cortical thickenings in both humeri. At the proximal end of the right humerus, there was a deformity with displacement of a terminal diaphyseal fracture fragment and its attached epiphyseal centers. In contrast, only the distal end of the left humerus was thickened. In the distal end of the right tibia, there was an old transverse metaphyseal fracture with thickenings of the cortex and displacement of the distal fracture fragment and its attached epiphysis. There were no changes suggestive of old or recent scurvy or rickets.

Following discharge from the hospital, the patient did not return for follow-up observations.

Case 5. M. C., male, was born September 4, 1936, after a normal pregnancy and labor; the birth weight was 7 pounds. He thrived on breast milk until the 5th week, when he suddenly became weak and dyspneic and remained so for 3 days when a single convulsion occurred. No injury was observed prior to the onset of these complaints. A few hours after the convulsion, he was admitted to the Babies Hospital and was found to be somnolent but hyper-irritable when disturbed. Respirations were irregular. The anterior fontanel protruded, but the neck was not stiff, and there were no signs of meningeal irritation.

Subdural fluid withdrawn from the left side of the anterior fontanel was blood-tinged, as was subarachnoid fluid obtained from the lumbar spine. The patient became more alert after these punctures, although the fontanel remained full and the sutures became widened. He vomited irregularly.

At 2 months, the cranial circumference measured 42 cm. Bloody subdural fluid was obtained in aspirations from both sides of the anterior fontanel. There were no hemorrhages in the ocular fundi. Roentgenograms of the cranium revealed widening of the great sutures and thinning and osteoporosis of the calvarium, but no fractures were visible. The extremities appeared to be normal clinically; roentgenograms of them were not made.

At 5 months, the patient was re-admitted for 2 weeks, with bilateral purulent otitis media. No abnormalities of the extremities were noted in the physical examination.

The patient re-entered the hospital at 7 months of age. Six days earlier, black and blue spots had appeared on the forehead and face. Similar spots were observed on the hands, feet, and back on the day of admission. Six hours before admission, the left thigh began to swell, and the infant cried out with pain when the thigh was touched or attempts were made to move him. The mother denied that the patient had been injured. Orange juice had been started at 3 months of age and had been taken in daily dosage of approximately 1 ounce.

Scattered ecchymoses were found in the skin of the face and extremities. The left thigh was diffusely swollen and tender; it was held in abduction and flexion. There were no hemorrhages in the ocular fundi. Subdural taps on the right and left side of the anterior fontanel yielded blood-tinged fluid. The blood and urine were normal microscopically and chemically; there was no hematuria. The bleeding time was 2 minutes; the clotting time was 6 minutes; there were 490,000 blood platelets per cu. mm. Kahn's test on the blood gave a nonsyphilitic reaction.

Roentgenograms of the extremities disclosed a fresh, long, spiral fracture of the left femur and an impacted fracture in the proximal metaphysis of the right humerus. Old healed fractures with angular deformities also were evident in the middle thirds of the right radius and ulna. There were no roentgen signs of old or recent scurvy. In the cranium, there were no visible fractures.

The left lower extremity was fixed in traction for 5 weeks, and the femoral fracture healed satisfactorily. The patient was discharged to an institution for chronic care and has not been observed since.

Case 6. A. L., female, was born on December 6, 1942, after cesarean section. She weighed 6 pounds. During the first 2 weeks, she appeared to be normal and suffered no recognized injuries.

Convulsions and projectile vomiting began at the end of the 2nd week. Thereafter convulsions recurred frequently, often as many as four times daily.

During the 6th week the mother noted that the infant's left leg was limp and tender. Injury to the baby was specifically denied; only the mother had cared for the infant. The head was large and measured 17 cm. in circumference. The anterior fontanel was large, full, and tense. Both eyes showed proptosis, and the vision appeared to be poor. Forty-five cc. of bloody subdural fluid were withdrawn from the right side of the anterior fontanel and 15 cc. from the left side. This fluid was yellow after centrifugation. Roentgenograms of the extremities showed a partially healed, complete transverse fracture of the left tibia and fine fragmentation of the distal end of the right femur and the proximal end of the right tibia. Delicate layers of subperiosteal bone overlay the external surfaces of the humeri. There were no roentgen signs of scurvy and no hematuria. In roentgenograms of the skull, the sutures were widened, but there were no fractures. The bones of the thorax and pelvis were normal.