SUBCUTANEOUS FAT NECROSIS AS AN UNUSUAL PRESENTATION OF CHILD ABUSE

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Any unusual clinical presentation is an elaborate phenomenon that may confuse the observer. This is particularly true when the latter becomes the involved clinician facing such a phenomenon. Therefore, it is not unusual when presentations of child abuse appear disguised as conventional pathologic entities.[1]

A clinician's usual skills may not be enough to distinguish such cases and as such, their investigative vision requires that they look at other etiologic possibilities.

Skin lesions are the most common presentation of child abuse and of these, bruises are the most common.[2,3] Children with bleeding disorders and ecchymoses may be wrongly diagnosed as having been abused. Cigarette burns may become infected and may be difficult to differentiate from circular lesions of impetigo. Children with osteogenesis imperfecta are known to bruise and fracture easily.[4] Intentional microwave oven burns were reported by Alexander in 1987 as an unusual manifestation of child abuse.[5] One case of osteolytic lesions and medullary fat necrosis following traumatic pancreatitis was reported in 1977.[6]

To our knowledge, subcutaneous fat necrosis has never been reported as a form of child abuse before. As far as we know, this is the first report of confirmed child abuse in two sisters presenting with subcutaneous fat necrosis.

Case Reports

Patient 1: An 18-month-old Saudi female was well until 15 months of age at which time she developed swelling of the dorsal aspect of the feet, legs and arms which lasted for three months.

The patient was admitted to a local hospital approximately six times during a three month period for the same problem, but no diagnosis was reached. The swelling became progressively worse and the patient was referred to King Faisal Specialist Hospital and Research Centre for further evaluation. She and her five-month-old sister, who presented with the same complaint, were referred with the diagnosis of lymphedema for lymphangiography.

The patient is the product of a full term pregnancy and normal delivery. Her development was normal. This child has mild hemolytic anemia and ovalocytosis with glucose-6-phosphate dehydrogenase deficiency.

The father is 38 years of age, the mother is 24 years of age, and the parents are not related. The father has ovalocytosis and the mother has sickle cell trait and glucose-6-phosphate dehydrogenase deficiency. The father is married to four women and has a total of 20 children. Eighteen of the children are normal. There is no similar condition except in these sisters.

Physical examination revealed a healthy child with bruises on her face. She had stony hard induration of the skin of both legs and both arms with multiple bruises involving both upper and lower extremities. The joints were not involved. The rest of the physical examination was essentially normal (Figure 1).

Patient 2: The patient is a five-month-old Saudi female who was well until four months of age when she developed

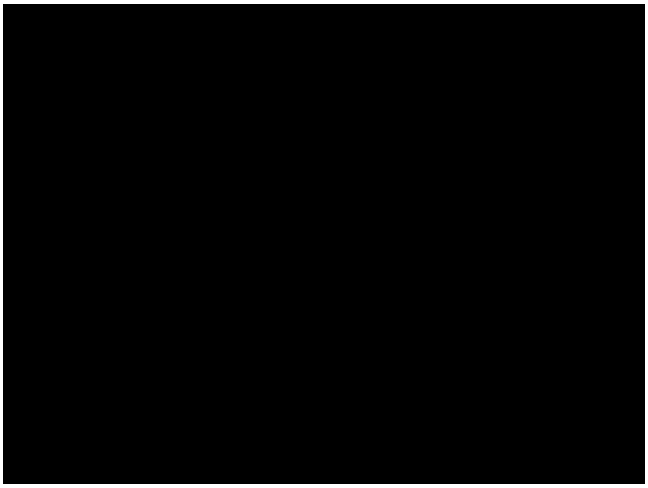

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FIGURE 1. Multiple indurated nodules on the left leg with multiple bruises on both legs; all lesions healed without scars.

swelling of the dorsal aspect of the feet, legs and back of one month's duration, similar to that of her sister. This patient was admitted to a local hospital approximately four times during a one-month period for the same problem and was referred with her sister (Patient 1) as congenital lymphedema for further evaluation. She is the product of a full term pregnancy with normal delivery.

The development was normal. Family history was similar to Patient 1. Physical examination revealed a healthy baby with multiple bruises on her face. She had stony hard induration of the skin, more pronounced on the back and both legs with mild involvement of her arms and obvious bruises of the affected areas. The rest of the physical examination was essentially normal and joints were not involved.

Several investigations were done to try to identify the cause of illness. Radionuclide lymphangiograms were normal on both sisters and excluded any lymphatic obstruction. Barium swallow was done on both patients to rule out lymphangiectasia as it is a common association with congenital lymphedema and these were normal on both patients.

Skeletal surveys on Patient 1 revealed a healed fracture of the left radius and fracture of the posterior part of the right ninth rib was detected on Patient 2. Skin biopsy from both patients showed similar results consisting of subcutaneous fibrosis with fresh and old hemorrhage and focal fat necrosis. The subcutaneous changes with some fat necrosis were consistent with findings that occur secondary to trauma. There was no evidence of scleredema (Figure 2). Computed tomography (CT) scan of the head on both patients was normal. Both patients presented with an unusual swelling, scleredema of Buschke, which is a connective tissue disease with increase in acid mucopolysaccharide frequently following infection. This

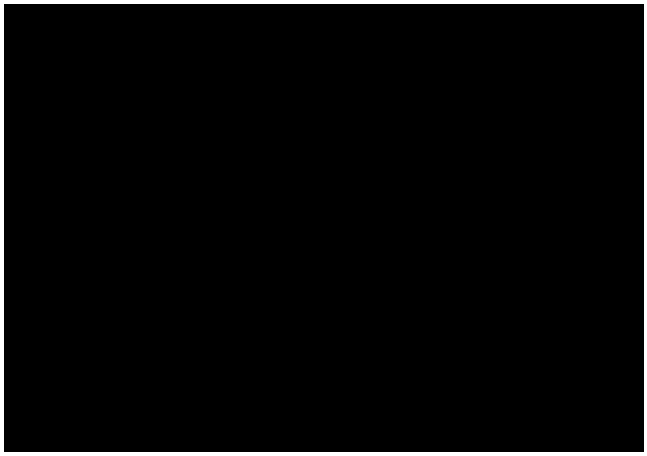

FIGURE 2. Micrograph from skin biopsy (Case 2) showing pronounced subcutaneous fibrosis extending beyond the terminal part of the sweat gland seen in the center. The focal fat necrosis and hemorrhage does not show well at this low magnification. Hematoxylin-eosin stain (magnification 50x).

was ruled out with a skin biopsy showing normal dermis and also because this disease rarely has familial transmission. Stiff skin syndrome was ruled out because the joints were not involved. Congenital lymphedema was ruled out by the normal lymphangiogram. Panniculitis was considered in our clinical diagnosis and supported by Pathology but the panniculitis does not have familial transmission, so factitious panniculitis caused by trauma was strongly considered. After consultation with different services including genetics, dermatology, psychiatry and social services, and having ruled out any coincidental injuries or familial causes, child abuse became the most likely diagnosis. It was the decision of the doctors involved to confront the mother with the diagnosis and she admitted that she herself had inflicted the various injuries on the two sisters when she was emotionally distressed. She admitted striking the children with any object at hand. Examples of her abusive behavior were striking the child with a cooking spoon, dropping the child on the edge of a glass table, dropping the child from the stairs or throwing the child against the wall. The mother had been previously treated in a psychiatric clinic prior to her marriage, which was confirmed by her family. The children's father was informed of the facts. He gave a written guarantee that he would be the primary person responsible for the well-being of these sisters. He also guaranteed that there will be another adult female with the children at all times until his wife has been treated for her illness. Subsequently the condition of the two sisters improved with complete healing of the latest skin lesions and only minimal involvement of the lower legs on the eldest sister with no specific therapy. The risk of recurrence was explained to the father.

Discussion

This unusual presentation of child abuse reminds us of the unlimited capability of people to commit violent, unexpected acts against young children within the family and the community. This is particularly true when one of the parents is known to have an underlying psychiatric/medical problem.

We need to emphasize greater awareness of the possibility of abuse in children who present for medical care when the etiology is obscure. In Saudi Arabia various clinical and severe manifestations of child abuse have been recently documented in several reports[8-11] which indicate an increasing awareness of such entity.

Morbidity and mortality associated with child abuse should be of great concern to the practicing pediatrician. To help prevent child abuse, physicians must become more

skilled in recognizing factors that place a child at risk. Early signs of abuse and neglect must be recognized and reported to ensure that more serious abuse and neglect are prevented in the future.[1,4,7]

Physicians must be aware of the different skin lesions and their causes, remembering that objects used to strike or burn a child will leave an imprint on that child. If the injury is not in keeping with the history given, or the child's level of development, child abuse must be a consideration. Therefore it is imperative that physicians learn to differentiate between such lesions.[4]

At present there is no structured national system to deal with cases of child abuse in the Kingdom. Such a system is urgently needed. Our institute has recently approved a "Child Advocacy Committee" which is comprised of pediatricians, social services, psychologists and nurses. If this proves successful, wide adaptation will be not only desirable but highly indicated and needed.

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