

October 1, 2014

Dear Sirs,

Re: Micah Dover

I was contacted by the mother of this infant and asked to review medical records and x ray images.

I do not know the infant, his parents, you or anyone involved in this matter. My review of this material and report are Pro Bono.

I am an Orthopaedic Surgeon, Board Certified by the American Board of Orthopaedic Surgery [Oct. 5, 1980].

I have studied bone development, bone healing, failed healing, and mineralization since 1969. In 2002 I began traveling abroad to third world countries helping friends that were Orthopedists working in this demanding environment. During this period, I learned to recognize Rickets. [which was virtually eradicated in the USA during the 1940's due to government mandated fortification of dairy products with Vit. D.]

I have an interest in Metabolic Bone Disease and "unexplained fractures" in infants and children and conditions which cause "brittle bones". I became interested in this area because I have had patients who presented with fractures that were initially "unexplained" and whose parents were accused of abuse...until further evaluation and testing established a diagnosis which explained the fractures.

I am a licensed to Practice Medicine in the state of California and am mandated to report any suspicion of child neglect or abuse. I take this responsibility seriously and do report any concerns of abuse or neglect. I receive regular requests to review these cases because of my interest in this area.

I served as the Director of Orthopedic Trauma @ Enloe Medical Center in Chico, California for the past five years. It is a busy regional trauma center serving Northern California. I continue to work as an Orthopedic Traumatologist here.

In 2008, I was asked by the Medical Board of California to join their expert review panel for the Medical Board. Later I was asked if I would also participate in the Central Complaint panel. I am still a member of these panels and am paid on a case by case basis.

For the Micah Dover case I reviewed medical records which included prenatal evaluations, delivery records, medical history, answers to specific medical questions re: history and family medical history and x ray images. These records were from Wake Med, Raleigh Campus and University of North Carolina Health Care.

Micah Dover, born 3-24-2014 by an urgent C section weighed 8 lbs. 10 oz. He was brought by his mother for evaluation on 7-19-14 because mother noticed pain from his

ribs and “popping”. Evaluation demonstrated an “unexplained left acromial fracture” and bilateral multiple rib fractures for which the mother could not offer any explanation.

In reviewing the medical history, I find several significant things that would be risk factors for this mother having an infant with inadequate mineralization and brittle bones. Between 2003 and 2014 she had nine pregnancies, eight of them ending in miscarriages. Sequential pregnancies is a known risk factor for a mother having an infant with inadequate mineralization. The reason for the miscarriages remains unknown. Micah was exclusively breast fed until 7-19-14. Human breast milk is not an adequate source of Vit. D.

There are several facts from the family history that are risk factors for having an infant with a collagen abnormality. There is a blood related family member [maternal uncle] that has been deaf since early life. Micah had a very large umbilical hernia in the second month of life. Mother and Micah have hypermobile joints. Mother had “heartburn” or GERD and regularly took antacids. Father had dental problems in that his adult teeth never came in...only primary teeth. This may be a manifestation of Odontogenesis.

Collagen abnormalities are well known to be associated with “brittle bones” and some infants are found at birth with multiple fractures, even when delivered by C section. Osteogenesis Imperfecta is a collection of a group of eight collagen abnormalities. DNA testing can confirm [in 90%] O I, but cannot exclude it. There are many other collagen conditions besides O I. These conditions can be inherited or may be the result of mutations.

Micah had an elevated bilirubin for the first week of life peaking above 17. Micah had an umbilical hernia.

Lab tests are consistent with Metabolic Bone Disease:

On 7-19-14 Lipase was low normal and Amylase was below normal @ 15 with 29 being the lowest normal value. These tests are sensitive indicators of abdominal trauma and their very low values contradict claims that this infant chest or abdominal trauma. Liver enzymes ALT and AST were elevated. These are non specific and tylenol and acetaminophen are known to cause these to be elevated.

In the presence of low and very low Lipase and Amylase, these tests are not consistent with abdominal or chest trauma. On 7-19-14 Micah had a Vit. D 25 of 19.6 which is in the deficiency range. His calcitriol was elevated at >190. This is seen in cases of infants with inadequate mineralization during the healing phase. The Alk. Phos. was elevated @ 330. [normal 27-305], but is very low considering the bilateral acromial fractures and multiple rib fractures present. This combined with the father's

history of Odontogenesis suggests this infant may have hypophosphatasia..a type of infantile Rickets known for infants presenting with multiple “unexplained fractures”.

The bone evidence is compelling. There is inadequate mineralization of the orbits of the

skull. There are flared rib ends. There is cortical tunneling and periosteal elevation. These findings are consistent with the lab values.

The Bilateral acromial fractures, and bilateral multiple rib fractures without any external chest wall or internal organ injury, low amylase and low lipase tests are not consistent with trauma of any kind, accidental or inflicted.

An infant because of its small size and limited muscle has a thin chest wall and multiple rib fractures from trauma virtually always have associated chest wall, or internal organ damage...to a greater extent than adults. Rib fractures due metabolic bone disorders usually do not have associated chest wall injuries or internal organ damage. Several of the ribs have lucencies at 90 degrees to the ribs which extends thru the callus..as described by Dr. Emil Looser...and are known findings in infants with metabolically related rib fractures.

In infants with conditions that result in fragile bones, bones break with normal care...even in the hospital....even when being examined by experience medical personnel.

After reviewing this material and considering the x ray images I have come to the following conclusion.

The diagnosis of Child Abuse because of “multiple unexplained fractures” is unsupportable.

The fractures and bone findings are most likely due to inadequate mineralization of the rapidly growing infant bone-- combined with a collagen abnormality.

I am sure of this and would testify to it under oath.

Sincerely,

Doug Benson M.D.

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