



## Pathology & Biology Section – 2005

### **G105 The Contribution of Computerized Image Analysis to the Diagnosis of Munchausen Syndrome by Proxy**

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After attending this presentation, attendees will understand the difficulty in diagnosing child abuse, in particular Munchausen syndrome by proxy, and understand the advantages of computerized image analysis for child abuse diagnosis.

This presentation will impact the forensic community and/or humanity by demonstrating the use of new technologies, such as computerized image analysis, when child abuse is suspected

Munchausen syndrome by proxy cannot be diagnosed by objective means unless the perpetrator is caught in flagrante delicto (such as when using video surveillance). A psychiatric report on its own does not constitute sufficient proof for such a diagnosis. The authors present a case that shows how new diagnostic means may be useful in the practice of clinical forensic medicine in general, and in the case of the Munchausen syndrome by proxy in particular.

The case concerns a female infant with a past history of hematomas described as "spontaneous" by the pediatricians. The investigation started when the infant, aged three months, was admitted to the hospital for a fracture of the skull, thought to be accidental on the basis of the initial findings. A clinical forensic examination and forensic diaphanoscopy casted serious doubt on the accidental version of the fracture of the skull. Multiple hematomas, invisible to the naked eye, were also revealed, leading to complementary medical imaging analyses. As investigations proceeded, evidence supporting the hypothesis of infant abuse was mounting. In spite of the authors' negative recommendation, the hospital physicians allowed the mother to take the child home for the weekend. On Sunday night, the mother brought the child back for emergency hospitalization. The infant presented with numerous petechiae on her head, with the exception of two areas: a digitiform zone on the scalp and a triangular zone in the nasobuccal region. Petechiae were also present on the upper part of the thorax and at the basis of the upper limbs. A number of hematomas, invisible to the naked eye, were revealed by forensic diaphanoscopy on the anterior side of the thorax. The lesional picture was consistent with a thoracic compression leading to the obstruction of the respiratory tract, in the context of an attempted asphyxia.

A key issue remained: who was the perpetrator of this child abuse?

The answer was provided using computerized analysis of the images obtained from the digitiform lesion on the infant's scalp and the mother's and father's fingers. The mother was identified as the perpetrator of the acts using objective criteria, in the particular context of Munchausen syndrome by proxy.

**Child Abuse, Computerized Image Analysis, Munchausen Syndrome by Proxy**