G28 Erroneous Notification of Sexual Abuse in an 8-Year-Old Female, Who Died From Acute Chest Syndrome in Sickle Cell Disease Combined With Deficit of Glucose-6-Phosphate Dehydrogenase

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After attending this presentation, attendees will understand the crucial importance of careful detection and skilled interpretation of anogenital findings in deceased pediatric subjects. Very often, normal postmortem artifacts and physiological variants of genital anatomy, especially in prepuberal children, can be misinterpreted by unskilled examiners and wrongly attributed to sexual abuse, with a poor forensic outcome.

This presentation will impact the forensic science community by improving knowledge of what is normal in anogenital anatomy during the postmortem interval and what is not. Attendees will also focus on the peculiar, different significance that one morphological sign may have on the living's, as opposed to the deceased's, anatomy. The health care practitioner whose sole experience ranges in the antemortem scenario, when operating untrained in a postmortem context, may dramatically confuse common cadaveric anogenital artifacts with traumatic injuries. In the reported case, such an occurrence is described.

An Italian 8-year-old black female of Western-African ancestry, suffering both low levels of glucose-6-phosphate dehydrogenase (G6PDH) and sickle cell disease requiring multiple hospitalizations for micro-occlusive crises, was admitted to the emergency room complaining of bilateral leg pain, fever, and general malaise. Laboratory tests revealed severe anemization (hemoglobin 3.6g/dL) and elevation in hemolysis markers. Clinical course showed acute chest syndrome unresponsive to repeated blood transfusions and intensive care therapeutic efforts, leading to death 48 hours after hospital admission. A few hours after death, during the recomposition of the body, nurses and pediatricians noted abnormal anogenital findings consisting in the absence of hymen and wide dilatation of the anal sphincter. Such findings were suspected as traumatic origin and confirmed by the gynecologist consultant.

Forensic autopsy took place six days after death and showed the following main findings: (1) at the anogenital exam, hypoplasia of the hymen with intact edges, but remarkable dilatation of the anal sphincter with two round-shaped abrasions above the pectinate line; no other anogenital or perineal injury; (2) at histology, rectal abrasions consisted in disepitelization with glandular damage, and microvascular disruption with blood cells and fibrin extravasation; no cellular infiltrate was detected, neither fibrosis or sclerosis in the mucosal and perineal specimens; and, (3) at autopsy, meningeal congestion and cerebral edema; hydrothorax (1200ml), pleural and pericardial adhesions; haemorrhagic edema and diffuse microthrombosis of the lung vessels; erythro- and granulo-blastosis of the lung, heart, and kidney; myocardial hypertrophy and focal myocardiosclerosis; acute tubular necrosis; hepato-splenomegaly with hepatic iron storages.

Autopsy was completed by microbiological analyses of anorectal and cervicovaginal specimens, excluding the occurrence of sexually transmitted infections.

The death of this young patient was related to an acute chest syndrome consequent to a severe sickle cell crisis. Suspected sexual abuse was definitely ruled out by expert examination of the body. In fact, the reported "absent hymen," considering its intact edges and the peculiar morphology, was interpreted as an anatomical variant (semilunar hypoplastic). Anal dilatation was itself explained by childhood anatomy, with underdeveloped glutei showing anal sphincter as "abnormally" evident, and by postmortal dynamic anal alterations. In fact, as reported, sphincter relaxation occurs immediately after death, followed by narrowing during rigidity onset, and by definitive anal relaxation.[1] Furthermore, skilled external examination and histopathology related the two anal "abrasions" to postmortem disepitelization in the site of insertion of a therapeutical suppository, occurred very short time before death.

In conclusion, the interpretation of genital postmortem findings remains an issue of main concern also for the forensic pathologist. In fact, until recently, scarce information existed on the nature and appearance of the anogenital tissues during the postmortem interval. Findings like mucosal disepitelization at different sites of the anogenital tissues have been widely classified as normal postmortem artifacts, but they can be eventually confused with traumatic findings by examiners whose sole prior experience lies in the antemortem forensic context.[2] Moreover, pediatric age makes the interpretation of suspected lesions even more challenging, since relevant interindividual variability in hymen conformation is characteristic of prepuberal young female population.

References:

1. McCann J, Reay D, Siebert J, Stephens BG, Wirtz S. Postmortem perianal findings in children. Am J Forensic Med Pathol 1996:17(4):289-98.
2. Crowley SR. Evidence–Based, Medical-Legal Documentation of the Postmortem Anogenital Examination. *Proceedings of the American Academy of Forensic Sciences*; 2009, Denver, CO.

Anogenital Exam, Sexual Abuse, Hymen Variability

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