Implementing post-mortem computed tomography in the assessment of neonaticide

Mathilde Ducloyer^{1,3} • Lucile Tuchtan² • Guillaume Visseaux³ • Guillaume Gorincour⁴

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After reading with great interest the article by Stenton and Cohen [1] we would like to contribute to this retrospective case series and underline the relevance of post-mortem computed tomography (PMCT) by complementary references.

We were surprised to note that only four cases had benefited from post-mortem imaging, which is presented as an option in post-mortem investigation. We would like to present several reasons why PMCT is particularly relevant in cases of suspected neonaticide.

PMCT is a reliable tool to assess vitality (i.e. live birth versus stillbirth). Previous studies showed that quantifying aeration on PMCT in both the pulmonary parenchyma and the bowel [2–4] can be used to differentiate between live birth and stillbirth. Putrefaction is one of the limits of this quantification, but this phenomenon is sufficiently well-understood not to be misinterpreted [5]. Moreover, using PMCT to detect air in organs before performing an autopsy on a newborn is crucial to correctly interpret the result of the floating lung test.

Computed tomography is also widely known to be one of the most efficient investigative tools for detecting traumatic injuries, especially bone fractures.

PMCT makes it simple to evaluate viability (i.e. term of pregnancy) by allowing measurement of long bone length and study of the ossification centers. Bone biometry is more reliable than morphometric parameters measured during autopsy such as the body weight or the abdominal or cranial perimeter, as these can be affected by post-mortem changes.

As the authors mentioned, post-mortem MRI is another option in this context. However, in addition to the advantages already detailed, PMCT is more accessible and quicker to carry out than MRI, so it should be the first choice. We agree with the authors that post-mortem imaging, like other post-mortem investigation techniques, should not be used alone. For this reason, the term “CT autopsies” should be avoided. PMCT is a complementary tool; it does not replace autopsy but provides additional data, that can guide a forensic pathologist to perform the most appropriate autopsy and that can be read again as many times as needed.

References

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✉ Mathilde Ducloyer
mathilde.ducloyer@chu-nantes.fr

¹ Department of Radiology, University Hospital, Nantes, France

² Forensic Medicine Department, University Hospital, Marseille, France

³ Forensic Medicine Department, University Hospital, Nantes, France

⁴ IMAGE2 (Institut Méditerranéen d’Imagerie médicale appliquée à la gynécologie, la grossesse et l’enfance), Marseille, France