



## A case study from the Salt River Mortuary, Cape Town, South Africa; one of the world's busiest mortuaries

### INTRODUCTION

Sudden unexpected death of an infant (SUDI), variously known as sudden infant death syndrome (SIDS), crib death or cot death, is a finding made when the cause of death is not predicted by a medical condition and cannot be determined after a thorough forensic investigation, by exclusion of all other known possibilities. Typically, the infant is found dead after having been put to bed, and exhibits no signs of suffering. In instances where an infant who dies from SUDI has an underlying medical condition, the onus is on the treating clinician to refer the sudden/unexplained death for forensic investigation<sup>1</sup>.

### CASE PRESENTATION

A one-month old African female infant was brought to the mortuary with suspected sudden infant death syndrome. The infant had been delivered by caesarean section, and had weighed 3000 g at birth. She had been bottle fed. She was said to have had "chest problems" and had been given Panado (paracetamol) by her mother, a 21-year old woman who had two other children aged two and four. The mother was unemployed and was the primary care-giver. The mother was a non-smoker and a non-drinker. The mother had taken her to the clinic three days prior because of a cough, and because the infant was coughing up blood. The mother said she had been sent home by the sister at the clinic.

### IMAGING AND DIAGNOSIS

On external examination the forensic pathologist found no evidence of blunt or sharp force trauma to the body. There was a hypo-pigmented rash of the buttocks and perineum in keeping with nappy rash. There was a large amount of green-yellow stool present in the nappy, suggestive of diarrhoea. A Lodox full-body X-ray image showed no fractures to any parts of the body, but revealed pulmonary infiltrates in both lung fields, consistent with pneumonia. An autopsy was not performed on the body, since traumatic abuse had been excluded and a cause of death other than natural causes was not suspected.

### DISCUSSION

In South Africa, radiological investigations are not routinely used to confirm or exclude suspected cases of SUDI<sup>1</sup>. However, in some centres, skeletal surveys are used to exclude the possibility of non-accidental injury (indicated by fractures) or to detect rib fractures associated with resuscitation of suspected SUDI cases<sup>2</sup>. Using conventional X-ray equipment, these surveys usually require multiple images. In this case, full-body imaging facilitated the skeletal survey by allowing all potential sites of fractures to be visualised in a single, rapidly obtained image. In this case, there were no outward signs of trauma, so no foul play was suspected, which was confirmed by the Lodox X-ray image. The image was also sufficient to confirm a natural death as a result of pneumonia, consistent with a medical history of chest problems and coughing up blood. Without the X-ray image, an autopsy would have been necessary to confirm the pneumonia. In a study of 192 suspected cases of SUDI in the Western Cape, Douglas et al. found that lung disease was the most common cause of death and that full-body radiological imaging was an efficient way to diagnose these lung conditions, obviating the need to perform a full autopsy<sup>3</sup>. By excluding both non-accidental death and SUDI through rapid, high-quality imaging, the time taken for examination was minimised, with a positive impact on workflow in this mortuary. An accurate cause of death diagnosis was reached without the need for autopsy.

### CONCLUSION

In this case, a full-body radiograph, in conjunction with an external examination, was sufficient to rule out trauma. Full-body radiographic evidence can be useful for excluding SUDI if other causes of death can be determined from the image.

**"Lodox imaging allows rapid exclusion of suspected SUDI cases  
without penalty to the Mortuary workflow."**

#### References

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