



## Pathology & Biology Section – 2005

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### G1 Deaths From Accidental Steam Inhalation During African Traditional Therapy

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The goal of this presentation is to present to the forensic community the injurious effects of steam inhalation on the respiratory system, resulting in the deaths of two children. Death from steam inhalation is a quite rare occurrence. In many countries, steam inhalation is practiced to cure cold, cough, or respiratory ailments, etc.

This presentation will impact the forensic community and/or humanity by highlighting the hazards associated with steam inhalation, if done with the whole body covered with a blanket and if necessary precautions are not taken. Under these conditions, traditional therapy can be risky.

Case history: Two children (aged 17 and 6 years) and their mother were inhaling steam from boiling water in a pot, while covering their bodies (including the face) with a thick woolen blanket. After steam inhalation of about 5 minutes, the 17-year-old knocked down the pot and boiling water spilled on the hot plate, producing a considerable amount of steam. Boiling water also spilled on that child and mother, resulting in focal scalds. Within one to two minutes, both children experienced difficulty in breathing, collapsed, and died in the home.

At autopsy, there was oedema of the larynx with blanched white tracheal mucosa in the younger child and marked congestion in the older child. Grossly, the lungs, brain, and heart showed hypoxia signs. Microscopically, there was oedema and coagulative necrosis of the tracheal mucosa; the lungs showed congestion, oedema, and haemorrhages; and the brain showed congestion, oedema and focal intra-cerebral haemorrhages.

Cause of death was attributed to hypoxia from inhalation of steam. It is common practice among the black Africans to use steam inhalation (traditional African therapy) known as ARAMELA in local Sotho African language) for respiratory problems or congestion or get rid of unspecified ailments, or for general well-being even when there is no evidence of any ailment (superstitious belief).

Moist air has more heat to give up than has an equal volume of dry air. Severe injuries tend to occur with steam inhalation in the form of oedema of the glottis, severe thermal tracheitis and destruction of bronchial mucosa, and haemorrhagic oedema of the centrally located alveoli which can lead to hypoxia and anoxia.

**Steam Inhalation, Respiratory Tract, Hypoxia**