



G95 Inadvertent Administration of Lidocaine: Illustration of Two Cases

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After attending this presentation, attendees will have viewed two cases showing that the inadvertent administration of lidocaine can lead respectively to death and to serious tetraparesis linked to loss of the cognitive functions.

This presentation will impact the forensic community by describing two cases that show how the inadvertent administration of lidocaine can lead respectively to death and to serious tetraparesis linked to loss of the cognitive functions.

Case 1: In the first case, a 35-year-old man who for many years has been affected by protruded disk between L4-L5 causing right lumbosciatic neuritis, during an orthopedic examination, was administered lidocaine and Thiocolchicoside injection in right paravertebral lumbar area.

Soon after the man started to feel worse, and over an hour, showed sudden loss of consciousness, seizures, acute respiratory insufficiency, arterial hypertension, and severe tachycardia. The man was transported to the local emergency room where he arrived comatose. The cerebral CAT showed small gas bubbles in the cornua of the lateral ventricles and suprasella cistern.

Despite the pharmacological treatment, the man suffered serious seizures with heart attack and subsequent death. After the family's complaint, by an order of the legal authorities, the external examination and the autopsy were performed two days later.

External examination: The man was 175 cm tall and his weight was 76 kg. No injuries were found in his body; the external examination showed only some puncture marks on the right wrist, on the antecubital fossae and on the back of the left hand, and subcutaneous tumefaction in right paravertebral lumbar region, on which there was a puncture mark 4 cm from the spinous apophysis of L5.

Autopsy findings: The forensic autopsy revealed brain edema and congestion of cerebral veins. There was no lesion in the scalp and in the galea capitis and no intracerebral hemorrhage was found. Pulmonary edema, pancreas and kidney congestion were found. The heart showed hypertrophic left ventricular and septal wall and left ventricular chamber dilatation. The section of subcutaneous tumefaction in right paravertebral lumbar region, saw in the external examination, showed a rounded formation, circumscribed by a fine membrane, of soft and elastic consistency, dark red complexion, contains a blood clot. The section of lumbar vertebrae and the following extraction of the conus medullaris allowed to find, at the level of the L5, a blood infiltration in the posterior dural sac and underlying arachnoid.

Histological Findings: The microscopic examination showed multivisceral congestion. Myocyte cellular hypertrophy and contraction-band necrosis of left ventricular and septal wall were observed. Severe left anterior descending coronary artery stenosis, softening of temporal cortex, white substance edema and neuronal cerebral and bulbar cytotoxic edema, spinal cervical cord edema were also noted. The terminal conus medullaris at the level of the L5 showed blood infiltration in the posterior dural sac and underlying arachnoid, soft and adipose tissue hemorrhagic extravasation.

Case 2: In the second case, a 58-year-old woman who for ten years had cervical pain due to protruding disk between C5-C6 was submitted to lidocaine infiltration made laterally to the cervical spinous apophysis.

Soon after, the doctor noticed the progressive decrease of the radial pulse, the loss of consciousness and the cardiac activity, so he started the external cardiac massage. After 15 minutes, the emergency medical doctor made an intracardiac injection adrenaline, after which there was a restarting of the cardiac activity. The woman was transferred to a hospital where she fell into coma.

The cerebral CAT showed many gas bubbles in the suprasellar, perisellar, and temporal periencephalic space, left sylvian valley and cornua of the lateral ventricles.

Currently the woman shows a serious situation of rigid-spastic tetraparesis and loss of cognitive functions.

Discussion: In the first case, vascular-peridural iatrogenic inoculation and the consequent sistematic diffusion permitted the neurotoxic damage lidocaine and epileptogenic action thiocolchicoside. The toxic cerebral effects destabilized the pre-existing ischemic cardiopathia, serious but clinically asymptomatic, causing the death of the man.

In the second case, at first the anaesthetic damaged the cervical orthosympathetic chains nerve ending, leading to a reflex inhibition of spinal cardiac-vasomotor centers and consequently to a hypovolemic shock, an then produced a direct neurotoxic damage of the S.N.C., both responsible of the quadriplegia.

Lidocaine, Coma, Tetraparesis