



E86 Fatal Asphyxia by Bolus in Elders With Mental Illness: The Role of Oral Health and Antimuscarinic Action of Drug Treatment

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After attending this presentation, attendees will be able to describe the impact of oral health in death by bolus.

This presentation will impact the forensic science community by demonstrating the role of an optimal level of oral hygiene with the control of xerostomia in these psychiatric patients.

Asphyxia may be caused by a suicide, homicide, or accident. This presentation explains the mechanism of the so-called death by bolus, due to obstruction of the upper airway. In this form of accidental suffocation, the foreign body is made of food, which penetrates and occludes completely the larynx or the bronchial branches. The victims are usually subjects in a state of acute intoxication by alcohol or drugs, partially or totally edentulous, with neurological or psychiatric disorders. The voracity in the act of swallowing food may be a predisposing factor. The partially edentulous and reduced periodontal support of the teeth, associated with dry mouth as a consequence of psychiatric therapy, causes difficulty in chewing, swallowing, and in the formation of food bolus. In particular, the use of atypical antipsychotic chloric drugs, such as olanzapine, clozapine, and tricyclic antidepressants, causes dry mouth for specific antimuscarinic action on the cholinergic system.

This study reports a case of an elderly woman found dead in her home. There was a deep purplish-red hypostasis on the posterior of the cadaver that was still fluid, and imprints could be created with the pressure from a finger. The inspection of the oral cavity identified the presence of material similar to the texture of bread (material that was also found on the floor). An account presented by her family during the judicial inspection revealed the medical history of the victim, who appeared to be suffering from paranoid schizophrenia, the most common subtype. The victim's psychiatrist confirmed this medical history. A toxicological analysis of the victim's body fluids was performed. The toxicological postmortem test results revealed the presence of tricyclic antidepressants in the body fluids and confirmed the existence of drug treatment at the moment of death. The dental consultation clearly revealed severe periodontal disease and partial edentulous. The analysis of the respiratory tract was performed through the withdrawal of the heart and lungs. At the opening of the trachea, the oral cavity revealed material that was also found in the carinal and bronchial angles: its pultaceous consistency had occluded the airway.

The combination of data collected during the judicial inspection and the results from the autopsy determined that the elderly woman's death was caused by acute respiratory failure as a result of an obstruction of the airway by a food bolus (bread). In fact, patients with psychiatric illnesses are subject to increased risk for fatal events of asphyxia. The causes can be attributed to the pathological condition which affects the swallowing reflex and the use of tricyclic antidepressants and antipsychotics, especially atypical chloric types, such as olanzapine and clozapine, which cause dry mouth for specific antimuscarinic action on the cholinergic system. Since the correct formation of the food bolus derives from both effective chewing and proper salivation, in psychiatric patients with diseases of the stomatognathic system, the formation of the bolus and its consequently correct passage from the oral cavity to



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esophagus is more complicated. These results point out a possible correlation between the genesis of events of asphyxia caused by the obstruction of the airway by a food bolus and oral health in patients with psychiatric disorders who are in drug treatment. The prevention of accidental asphyxial episodes in patients affected by these diseases could be accomplished through appropriate treatment and the observance of an optimal level of oral hygiene in combination with the control of xerostomia by means of appropriate protection or any alternative pharmacological therapies.

Forensic Sciences, Oral Health, Asphyxia