# Otolaryngological Aspects of Sudden Infant Death Syndrome

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## Introduction

**Sudden infant death syndrome (SIDS)** is characterized by the sudden death of an apparently otherwise healthy infant, typically during sleep, with no obvious case after a thorough post-mortem and scene death examination. It can be attributed to an abrupt airway obstruction while sleeping and upon arousal, re-breathing of expired gases; thermal stress; and undiagnosed upper airway infection; cardiac arrhythmia and poisoning.

Although the specific cause of death remains obscure in most SIDS cases, there is growing body of evidence from autopsies, which suggest head and neck (H&N) pathology is involved in some SIDS cases.

## Methodology

A MEDLINE search and hand search were conducted to identify reports published between 1969 and 2011 in the English language on the pathophysiology of SIDS related to the H&N organs.

### Identified H&N Pathologies

#### Larynx involvement:
Laryngeal descent at 4-6m creates a common space for air, food and liquid. Fetal-types chemoreceptors are easily triggered and cause reflux.

#### Upper respiratory infections:
HPIV- and RSV-related infections were associated with SIDS.

#### Oropharyngeal pathologies:
aberrant elongated uvula, large lingual thyroglossal cyst, hyper-secreting palatine tonsils.

#### Acute otitis media:
Infants reported with "silent" AOM had a relatively high rate of an otomeningitic complication and a fatal outcome, as learned from a few temporal bone studies from SIDS victims.

#### Inner ear malfunction:
Significantly decreased unilateral TE_OAE signal-to-noise ratios in SIDS victims. Proportion pathophysiology is an injury to the inner hair cells, which facilitate transmission of blood CO₂ levels to the brain.

#### Maxillofacial deformities:
The posterior position of the maxilla and mandible narrowing the retropalatal airway were observed in lateral cephalograms of SIDS infants.

#### Carotid body abnormalities:
Marked reduction/absence of dense cytoplasmic granules in the carotid chemoreceptor cells leads to blockage of normal stimulation of respiration during the periods of infantile hypoxia.

#### Aberrant blood vessels:
rare congenital variations of the supra-aortic vessels, i.e. common carotid trunk, arteria lusoria and aberrant origin of the vertebral arteries.

#### For further reading:

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## Conclusion

Future research should focus on the autopsy evidences collected so far, in order to establish a proactive risk-management in high-risk infants. Extra-esophageal reflux, imminent airway in craniofacial and intrinsic congenital malformations which threaten it should be addressed promptly, in addition to the recommended cautions for this age group: supine sleep position on a firm surface, consider offering a pacifier and avoid overheating and smoking.

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*Food aspiration in a bronchial lumen.*