

FORENSIC MEDICAL EVALUATION OF ENT (EAR, NOSE, AND THROAT) INJURIES, LITERATURE REVIEW

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Abstract.

ENT (Ear, Nose, and Throat) injuries are frequently encountered in forensic medical practice and can result from various traumatic events. These injuries can range from mild to severe, having significant clinical and legal implications. This article delves into the comprehensive forensic medical evaluation of ENT injuries, exploring the mechanisms of trauma, pathomorphological changes, and the methodology of forensic examination.

Keywords: ENT, adult, anatomy, head, medical, medicine, neck, nose, otolaryngology, throat.

KBT ORGANLARI (QULOQ, TOMOQ VA BURUN) SHIKASTLANISHINING SUD-TIBBIY EKSPERTIZASI, ADABIYOTLARNI KO'RIB CHIQISH

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Annotatsiya.

KBT organlarining (quloq, tomoq va burun) shikastlanishi sud-tibbiyot amaliyotida tez-tez uchraydi va turli xil travmatik hodisalarning natijasi bo'lishi mumkin. Ushbu jarohatlar engildan og'irgacha bo'lishi mumkin, bu sezilarli klinik va huquqiy oqibatlarga olib keladi. Ushbu maqola KBB organlarining shikastlanishini har tomonlama sud-tibbiy baholashga bag'ishlangan bo'lib, shikastlanish mexanizmlarini, patomorfologik o'zgarishlarni va sud-tibbiy ekspertiza metodologiyasini o'rganadi.

Kalit so'zlar: KBT, kattalar, anatomiya, bosh, tibbiy, bo'yin, burun, Otorinolarinologiya, tomoq.

СУДЕБНО-МЕДИЦИНСКАЯ ЭКСПЕРТИЗА ПОВРЕЖДЕНИЙ ЛОР-ОРГАНОВ (УХА, ГОРЛА И НОСА), ОБЗОР ЛИТЕРАТУРЫ

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Аннотация.

Травмы ЛОР-органов (уха, горла и носа) часто встречаются в судебно-медицинской практике и могут быть результатом различных травматических событий. Эти травмы могут варьироваться от легких до тяжелых, что имеет значительные клинические и юридические последствия. Эта статья посвящена комплексной судебно-медицинской оценке повреждений ЛОР-органов, исследует механизмы травмы, патоморфологические изменения и методологию судебно-медицинской экспертизы.

Ключевые слова: ЛОР, взрослый, анатомия, голова, медицинский, шея, нос, отоларингология, горло.

Systematic reviews have concluded that most medical schools do not require otolaryngology instruction despite the high incidence of ENT problems in the general patient population.[1]

Mechanisms of Trauma

Mechanical Injuries

- Blunt Trauma: Impact from blunt objects, falls, and motor vehicle accidents.
- Sharp Trauma: Incised, stab, and gunshot wounds.
- Barotrauma: Pressure changes, such as those occurring during explosions or rapid ascent/descent.[2]

Chemical and Thermal Injuries

- Chemical Burns: Exposure to corrosive chemicals (acids, alkalis).
- Thermal Burns: Exposure to high temperatures, steam, or flames.[3]

Biological Trauma

- Infectious Agents: Viruses, bacteria, and other microorganisms can cause inflammatory processes and damage.

Pathomorphological Changes

External Ear

- Macroscopic Changes: Hematomas, lacerations, and avulsions of the auricle.
- Microscopic Changes: Edema, hemorrhage, and inflammatory cell infiltration in the dermis and subcutaneous tissues.[4]

Middle Ear

- Macroscopic Changes: Tympanic membrane perforations, ossicular chain disruptions, and hemotympanum (blood in the middle ear cavity).
- Microscopic Changes: Inflammatory cell infiltration, granulation tissue formation, and fibrosis.

Inner Ear

- Macroscopic Changes: Labyrinthine contusions, membrane ruptures, and basal skull fractures involving the inner ear.
- Microscopic Changes: Hair cell loss, spiral ganglion neuron degeneration, and endolymphatic hydrops.[5]

External Nose

- Macroscopic Changes: Nasal bone fractures, hematomas, and lacerations of soft tissues.
- Microscopic Changes: Inflammatory cell infiltration, hemorrhage, and granulation tissue formation.

Nasal Cavity

- Macroscopic Changes: Mucosal lacerations, nasal bleeding, and septal hematomas.
- Microscopic Changes: Necrosis of mucosal cells, submucosal hemorrhage, and inflammatory infiltrates.

Paranasal Sinuses

- Macroscopic Changes: Fractures of sinus walls, sinusitis due to trauma.
- Microscopic Changes: Mucosal inflammation, purulent exudate, and bone necrosis.[7]

Throat

Larynx

- Macroscopic Changes: Cartilage fractures, mucosal lacerations, and hematomas.
- Microscopic Changes: Inflammatory cell infiltration, submucosal hemorrhage, and cartilage necrosis.

Trachea

- Macroscopic Changes: Tracheal wall lacerations, hematomas, and subcutaneous emphysema (air in subcutaneous tissues).
- Microscopic Changes: Inflammatory infiltrates, granulation tissue formation, and fibrosis.

Pharynx

- Macroscopic Changes: Mucosal lacerations, hematomas, and secondary infections due to trauma.
- Microscopic Changes: Inflammatory cell infiltration, mucosal necrosis, and granulation tissue formation.

Methodology of Forensic Medical Examination

External Examination

- Initial Assessment of Injuries: Examination of visible signs of trauma (hematomas, lacerations, hemorrhages), photographing, and documenting.
- Analysis of Injury Location: Determining the anatomical location of injuries and their relation to underlying structures.

Internal Examination

- Endoscopy: Utilization of endoscopic techniques for visualizing internal ENT injuries.
- Autopsy: Detailed dissection and examination of ENT organs in fatal cases to identify internal injuries.
- Histological Examination: Microscopic examination of tissues to determine the nature of injuries and the stage of inflammatory processes.

Laboratory Investigations

- Toxicological Analysis: Identification of toxic substances that may have caused or exacerbated the injuries.
- Microbiological Analysis: Detection of infectious agents that may have contributed to inflammatory processes.[5]

Forensic Medical Interpretation

Determining the Mechanism of Injury

- Comparative Analysis of Injuries: Correlating the nature and location of injuries with the possible mechanism of trauma.
- Evaluating the Probability of Various Scenarios: Determining the most likely mechanism of injury based on pathomorphological data and scene investigation findings.

Estimating the Age of Injuries

- Study of Healing Stages: Determining the age of injuries based on the stage of inflammatory and reparative processes.
- Use of Specialized Methods: Radiological, immunohistochemical methods for precise dating of injuries.

Legal Assessment

- Forensic Medical Report: Formulating conclusions on the nature and severity of injuries and their consistency with the mechanism of trauma.
- Preparation of Court Materials: Detailed documentation of all findings, preparation of reports, and expert opinions for presentation in legal proceedings [7].

Conclusion. Forensic medical evaluation of ENT injuries requires profound knowledge of anatomy, pathology, and forensic medicine. A comprehensive approach to investigation, including external examination, internal examination, and laboratory methods, allows for accurate determination of the mechanism and age of the injury, as well as providing an

objective legal assessment. Thorough analysis of all aspects of ENT injuries is key to achieving fair resolution in legal cases involving such injuries.

List of used literature:

1. Ishman SL, Stewart CM, Senser E, et al.. Qualitative synthesis and systematic review of otolaryngology in undergraduate medical education. *Laryngoscope*. 2015;125:2695–708.
2. Griffiths E. Incidence of ENT problems in general practice. *J R Soc Med*. 1979;72:740–2.
3. Wald ER, Applegate KE, Bordley C, et al.. American Academy of Pediatrics. Clinical practice guideline for the diagnosis and management of acute bacterial sinusitis in children aged 1 to 18 years. *Pediatrics*. 2013;132:e262–80.
4. Ishii LE, Tollefson TT, Basura GJ, et al.. Clinical practice guideline: improving nasal form and function after rhinoplasty executive summary. *Otolaryngol Head Neck Surg*. 2017;156:205–19.
5. Bhattacharyya N, Gubbels SP, Schwartz SR, et al.. Clinical practice guideline: benign paroxysmal positional vertigo (update). *Otolaryngol Head Neck Surg*. 2017;156(3_suppl):S1–S47.
6. Rosenfeld RM, Schwartz SR, Pynnonen MA, et al.. Clinical practice guideline: tympanostomy tubes in children. *Otolaryngol Head Neck Surg*. 2013;149(1 Suppl):S1–35.
7. Stachler RJ, Chandrasekhar SS, Archer SM, et al.. American Academy of Otolaryngology-Head and Neck Surgery. Clinical practice guideline: sudden hearing loss. *Otolaryngol Head Neck Surg*. 2012;146(3 Suppl):S1–35.