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SPECIAL REVIEW

Marathon of eponyms: 12 Ludwig angina

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The use of eponyms has long been contentious, but many remain in common use, as discussed elsewhere (Editorial: Oral Diseases. 2009: 15; 185). The use of eponyms in diseases of the head and neck is found mainly in specialties dealing with medically compromised individuals (paediatric dentistry, special care dentistry, oral and maxillofacial medicine, oral and maxillofacial pathology, oral and maxillofacial radiology and oral and maxillofacial surgery) and particularly by hospital-centred practitioners. This series has selected some of the more recognised relevant eponymous conditions and presents them alphabetically. The information is based largely on data available from MEDLINE and a number of internet websites as noted below: the authors would welcome any corrections. This document summarises data about Ludwig angina.

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Also known as

Angina maligna
Morbus strangularis

The condition

Ludwig angina is a potentially life-threatening, rapidly expanding, diffuse inflammation of the submandibular, submental and sublingual spaces bilaterally. Causative bacteria include streptococci, staphylococci, Gram-negative and anaerobic microrganisms. Typically, pus is not produced but gross oedema appears as a result of the production of extracellular exudate. The organisms spread rapidly through the tissue planes due to the production of proteolytic enzymes (streptokinase and streptodornase).

The focus of infection in most cases is a non-vital lower molar, or pericoronitis related to a partially erupted lower third molar. The infection descends down the carotid sheath and fascial planes of the neck towards the mediastinum.

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Although the wide-spread involvement of Ludwig angina is mainly seen in persons with impaired immunity (e.g. malnutrition, diabetes), it can develop in otherwise healthy individuals. Postprocedural infection from tongue piercing can also lead to Ludwig angina.

Clinical features include brawny swelling of the neck and submandibular region, severe pain and raising of the floor of the mouth with the tongue displaced into the palate and the mouth forced open. Swelling of the submandibular and/or sublingual spaces is distinctive in that the swellings are hard and classically 'board-like'. Malaise, fever, dysphagia and in severe cases, dyspnoea occur. Signs such as stridor or the patient not being able to swallow their saliva suggest that airway compromise is imminent. If the person does not succumb to airway obstruction, pericardial infection and pulmonary empyema can be lethal.

Treatment includes airway maintenance, parenteral antibiotics (e.g., high-dose penicillin G or clindamycin with or without metronidazole) and early surgical decompression of all the involved fascial spaces. Although pus is not drained, copious amounts of oedema fluid drain from the surgical incisions and is important to maintain drainage by the insertion of surgical drains. The role of corticosteroids to reduce laryngeal oedema is controversial but is often advocated. Nasotracheal intubation is sometimes indicated for ventilation but can be technically difficult, often requiring an awake endoscopic intubation. Tracheostomy is to be avoided when possible as there is a risk of spreading of the infection further.

Background to eponym

In 1836, Wilhelm Friedrich von Ludwig described five patients with pronounced neck swelling that progressed rapidly to involve the tissues between the larynx and the floor of the mouth. His first patient was Queen Catherine of Würtemberg.

The main person

Wilhelm Friedrich von Ludwig was born on 16 September 1790, in Uhlbach near Stuttgart, in the Duchy of Wurtemberg (electorate from 1803, Kingdom

of Würtemberg from 1806, now Germany). He started as an apprentice to a surgeon in Nurnburg and later studied Medicine at the University of Tübingen, graduating in 1811. The next year Ludwig became Feldspital-Oberarzt with an army regiment in Smolensk. After the battle of Vilna, he fell ill and was imprisoned by the Russians for 2 years, but was released in 1814, having made himself useful as a physician. Ludwig then worked at Lazaretto in Hohenheim and, in 1815, was appointed Professor of surgery and midwifery at Tübingen and later Hofmedicus to King Friedrich II, and from 1817 was 1 Leibmedicus to King Wilhelm I, achieving recognition as the ultimate authority on surgery and obstetrics with the royal family and among his colleagues.

In 1836 Ludwig became Deputy Director, and then in 1844 Director of the Medicinal-Collegium. In 1855, he retired with the title of Excellenz and a decade later died, on 14 December 1865.

Source internet sites (accessed 21 February 2009) and further reading

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