Thoracic empyema resulting from direct extension of Ludwig's angina

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Case description: A 17-year-old Egyptian male developed Ludwig's angina after a failed trial of treatment for a left lower teeth abscess, which was complicated by LT sided empyema and pneumonia.

Assessment/Results: The patient arrived at ER dep. on September 3, 2014, with a 1-week history of lower left quadrant odontalgia, left neck pain, and fever. He complained of increasing swelling of the left submandibular region and dysphagia over the past 2 days. His physician had started him on a regimen of cefotaxime I.M. 5 days before and subsequently referred him to the hospital based on the continued and progressive nature of the illness.

Physical findings on admission were a temperature of 38.5°C, a respiratory rate of 24 breaths/mm, a pulse rate of 112 beats/min, and a blood pressure of 100/60 mm Hg. There was bilateral (left > right) indurated edema of the submandibular and submental regions. Intraoral examination showed moderate trismus, fetid odor. There was bilateral sublingual edema (left > right) and an ulceration in the left floor of the mouth that was spontaneously draining purulent fluid.

No cardiac murmurs or rubs were evident. The remainder of the physical examination was unremarkable.

Initial diagnostic laboratory testing showed a white blood cell count (WBC) of 34,400/mm³. Airway films were normal. The computed tomography (CT) scans of neck obtained on admission suggested edema of the submandibular and and underwent external incision and drainage of the neck swelling by transverse incision. Drains were placed. Pus samples were sent for culture and antibiotic sensitivity testing followed by admission on empirical intravenous (i.v.) antibiotics until culture revealed the organism that was pseudomonas sensitive for Tienam.

After one week of treatment, the neck swelling subsides, pt developed chest pain and dysnea, chest x-ray film was done and revealed LT sided massive opacity involving the whole left hemithorax and thoracocon turns was done in the emergency room by cardiothoracic resident which yielded pus that sent for microscopic examination and culture and sensitivity so it was diagnosed empyema that needs urgent chest tube insertion that revealed 600 c.c of pus and left in the patient for 7 day with daily follow up by chest x-ray till whole chest is clear and the drain removed, the patient was discharged on day 16.

Theoretical background: Ludwig's angina, otherwise known as Angina Ludovici, is a serious, potentially life-threatening cellulitis, or connective tissue infection of the floor of the mouth, usually occurring in adults. It is named after the German physician, Wilhelm Friedrich von Ludwig who first described this condition in 1836. Other names include “angina Maligna” and “Morbus Strangulantis”. Ludwig's angina should not be confused with angina pectoris, which is also otherwise commonly known as “angina”. The word “angina” comes from the Greek word ankhon meaning “strangling”, so in this case, Ludwig’s angina refers to the feeling of strangling, not the feeling of chest pain, though there may be chest pain in Ludwig’s angina if the infection spreads into the retrosternal space. This infection most commonly arises from an infected second or third mandibular molar tooth. It is an aggressive, rapidly spreading cellulitis without lymphadenopathy with potential for airway obstruction and requires careful monitoring and rapid intervention for prevention of asphyxia and aspiration pneumonia.