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Case report

A fatal case of empyema thoracis: the price for underestimating odontogenic infections

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ABSTRACT

Most dental infections are often underestimated by both patients and professional health care givers. When poorly managed, odontogenic infections may result in serious morbidity and life-threatening conditions. This article reports a fatal case of empyema thoracis in a 16-year-old male after an odontogenic infection. The challenges of management in our environment are discussed. Furthermore, the importance of understanding the route of spread after odontogenic infections is highlighted.

1. Introduction

Odontogenic infection can result in both local and systemic complications after hematogenous, lymphatic, or direct spread. Although majority of such complications are benign, they sometimes lead to significant morbidity or even death [1]. Intrathoracic complications commonly follow descending neck infection, and the outcome of such infections depends on early diagnosis and aggressive treatment [2]. We report a fatal case of empyema thoracis after a descending odontogenic infection in a young male with no history of underlying systemic disease.

2. Presentation of Case

A 16-year-old male student presented to our hospital with a 15-day history of left facial swelling which was preceded by toothache. The toothache was said to be spontaneous, sharp, disturbing to sleep, and aggravated by chewing/mastication. A few days later, he developed fever, odynophagia, and left facial swelling, which led to his being presented to a traditional healer who made intraoral incisions and applied native medication. However, his condition worsened with additional symptoms of bilateral neck swelling, limitation in mouth opening and neck extension, difficulty in breathing, paroxysmal nocturnal dyspnea, and orthopnea. Ten days into the illness, he developed cough that was initially dry but later became productive of sputum and associated with chest pain which led to his being presented to a primary health center, where he was given supportive treatment with a 5-day course of analgesic and antibiotic, without significant improvement. The patient was subsequently referred to our medical center for further management. He had no known systemic illness, and he is from a low socioeconomic class.

Examination revealed a young man who was dyspneic at rest, febrile to touch, but not pale or jaundiced. Extraoral findings included left facial soft-tissue swelling involving the submandibular space (Figure 1) with tenderness and positive differential warmth. Submandibular lymph nodes were palpable bilaterally and mildly tender. The neck was actively flexed in position, and there was severe pain on attempting to extend the neck. Soft-tissue crepitation was noted around the root of the neck, anterior chest wall, and posterior cervical regions.

On intraoral examination, there was marked trismus, poor oral hygiene, and carious lower left second molar and right first molar. The pharyngeal region could not be examined because of the marked trismus.

Chest findings were a respiratory rate of 40 breaths/min and tracheal deviation to the right. Additional findings were a reduced chest wall expansion, reduced tactile fremitus, percussion note, diminished

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Figure 1. Swelling involving the left submandibular region.

breath sounds, and vocal resonance on the left infraclavicular and infra-axillary regions.

On diagnostic thoracocentesis, 20 mL of frank purulent effluent drained freely (Figure 2). A diagnosis of odontogenic infection complicated by empyema thoracis was made. Lateral oblique view of the jaws revealed the likely source of infection to be the lower left first or second molar (Figure 3).

After confirmatory chest x-ray, the patient underwent chest tube thoracostomy, which yielded about 650 mL of purulent fluid at the point of drainage, and this was submitted to the laboratory for pleural fluid analysis. Lateral view of the neck showed widening of the prevertebral soft-tissue space (Figure 4), whereas a posteroanterior view of the chest showed features consistent with pneumothorax, lung collapse, and pleural effusion on the left (Figure 5). Despite treatment, the patient's condition deteriorated and he died 4 days after admission.

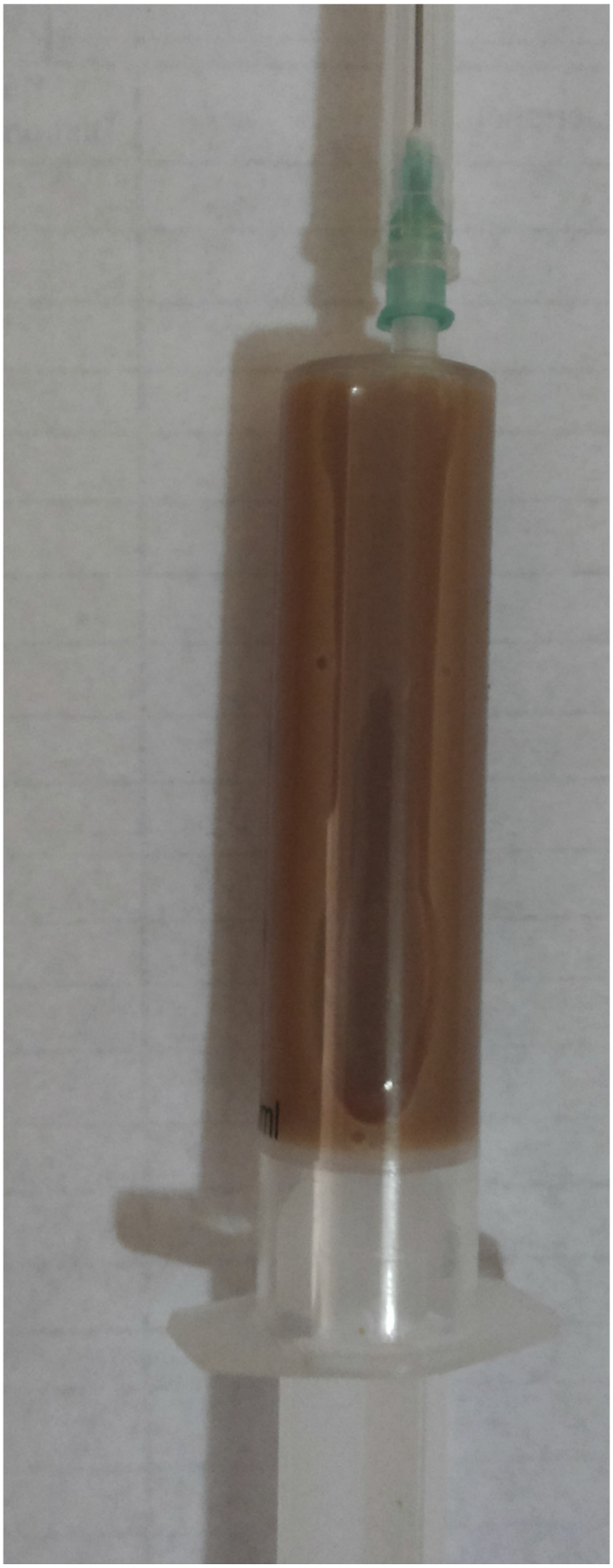

Figure 2. Purulent aspirate on thoracocentesis.