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*Actinomycosis of the maxillary alveolar process – description
of the case*

Actinomycosis belongs to specific infections of the oral cavity and face caused by Gram-positive anaerobic bacterium – the *Actinomyces israelii*. Actinomycetes are considered to be saprophytes abiding in human oral cavity. According to Masa Onisi classification cited in the Japanese literature actinomycetes are divided into: 1) *Actinomyces* type A – present in carious defects; 2) *Actinomyces hominis* – colonizing periodontium; 3) *Actinomyces naeslundii* – encountered in periodontal pockets; 4) *Actinomyces israelii* – locating in soft tissues and osseous trabeculae of the jaws (2). Most frequently actinomycosis develops as a result of odontogenic inflammatory processes, i.e. in apical granuloma of teeth with gangrenous pulp. It also develops in the pouches of wisdom teeth changed by inflammation, in the inflammatory diseases of periodontium as well as purulent inflammations of palatine tonsils. The inflammation occurs most frequently in the region of the angle of maxilla as cervicofacial actinomycosis and in the region of parotid gland.

The characteristic feature of actinomycosis is the occurrence of three clinical symptoms: plank-hard infiltration, bluish-red pigmentation as well as numerous fistulae with meagre amount of purulent secretion. Sometimes the pathologic process may increase through continuity from soft tissues to the bone leading to actinomycotic inflammation (1, 2).

In the microscopic picture the presence of actinomycetes colonies is stated. The colonies are surrounded by numerous neutrophilic granulocytes and macrophages containing fat bodies (xanthoma cells). Outside there is new connective tissue (granulation tissue). The basic treatment of actinomycosis is antibiotic therapy (1–6). Surgical treatment is indicated in the limited tuberous pathological changes as a procedure of choice.

DESCRIPTION OF THE CASE

The patient M.D. aged 11 turned up at the Clinic of Dental and Maxillofacial Surgery of the Medical University of Lublin in the afternoon on 9th March, 1998 because of oedema of the cheek and the region of the angle of maxilla on the right that was constantly growing since the previous day. Clinical intraoral examination stated slight ectasis of the alveolar process of the maxilla in the region of the 16th tooth, inflammatory infiltration in the buccal vestibule and the presence of the 16th tooth roots partly covered with granulation tissue. Submandibular lymph nodes on the right were inaccessible on palpation because of oedema descending on the neck; on the left they were impalpable. In the radiological examination (panoramic radiogram and tooth X-ray of the region of the tooth 16–17) remodelling of the osseous structure of the maxilla alveolar process with periosteal

reaction was stated. The picture might have corresponded with the diagnosis of actinomycosis (Fig. 1, Fig. 2).



Fig. 1. Panoramic radiogram before the extraction of the root of 16th tooth – visible remodelling of the osseous structure of the maxillary alveolar process with the periosteal reaction



Fig. 2. X-ray of the alveolus of the 16th tooth – condition after the extraction of roots of the 16th tooth

It is worth mentioning that in blood cell count performed on the day of patient's admission the leukocyte level was increased up to 18,000. The extraction of the 16th tooth was performed in infiltration anaesthesia with 2% Lignocaine and Noradrenaline. Considerable amount of granulation curetted from the alveolus was sent for histopathological examination. The alveolus was surgically supplied. The patient was ordered 600 mg Lincocin twice a day, Rutinoscorbin and calcium. The process of post-operative healing did not reveal any complications. The sutures were taken off seven days after the procedure.

The result of histopathological examination: *Actinomycosis processus alveolaris maxillae, suppuratio et granulatio* (Fig. 3). Histopathological diagnosis suggested the necessity of further treatment, although the healing of alveolus after the extraction of roots of the 16th tooth was normal. The patient was admitted to the Department of Dental and Maxillofacial Surgery for further treatment. He received injections of 600,000 IU crystalline penicillin four times a day as well as ionic medication with crystalline penicillin (10 medications).



Fig. 3. Actinomycotic colony surrounded by neutrophilic granulocytes. H+E staining. Magn. x400

At the end of the cure he was administered 120,000 IU debecillin. After two weeks of treatment the patient being in general good health state was discharged from hospital with the recommended periodic check-ups, conservative treatment of teeth and maintaining oral cavity hygiene.

DISCUSSION

The literature in the recent years reveals that clinical symptoms of actinomycosis can be very different. Alleviation of these symptoms may be the consequence of general use of antibiotics with the wide spectrum of activity as well as teeth conservative treatment. At present the actinomycosis of the oral cavity and face occurs very seldom and with relatively small inflammatory reaction and the formation of small periodontal abscesses. Sometimes in the clinical picture there is oedema observed as well as small amount or the lack of purulent secretion, together with progressing destruction of the maxillary bones.

The presented case in which the most crucial were the features of acute inflammation of perimaxillary tissues, the presence of gangrenous tooth roots and considerable amount of granulation in the alveolus suggested the diagnosis of odontogenic inflammation. However, radiological picture with visible remodelling of the osseous structure of the maxillary alveolar process and the periosteal reaction suggested the possibility of actinomycosis which was confirmed by histopathological examination. The differential diagnosis of faciocervical actinomycosis mainly considers non-specific chronic odontogenic inflammation of perimaxillary tissues, osteitis, inflammation of submandibular and cervical lymph nodes and specific inflammatory processes – tuberculosis and syphilis. Neoplastic process should be excluded too (5, 6).

CONCLUSIONS

1. In the era of wide use of antibiotics clinical symptoms of actinomycosis have an atypical and milder course.
2. Atypical clinical picture of the inflammatory changes in the oral cavity and face demand a thorough analysis and performance of auxiliary examinations.

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SUMMARY

The authors presented a rare case of the actinomycosis of the maxillary alveolar process with atypical clinical symptoms in an 11-year-old boy. Radiological examination revealed remodelling of the osseous structure with periosteal reaction, suggesting the suspicion of actinomycosis, which was confirmed by histopathological examination.

Promienica wyrostka zębodołowego szczęki – opis przypadku

Autorzy przedstawili rzadki przypadek promienicy wyrostka zębodołowego szczęki o nietypowych objawach klinicznych u jedenastoletniego dziecka. Badanie radiologiczne wykazało przebudowę struktury kostnej z odczynem okostnowym, sugerując podejrzenie *actinomycosis*, co zostało potwierdzone badaniem histopatologicznym.