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CLINICAL STUDY

Complications after third molar surgery

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Abstract: The authors describe the incidence of postoperative complications after the surgical removal of third molars, most common postoperative complications and their symptoms as well as risk factors leading to greater incidence of postoperative complications *(Ref. 17).* Full Text (Free, PDF) *www.bmj.sk.*
Key words: third molar, complication.

Symptoms occurring during the eruption of third molars (wisdom teeth) affect numerous patients, especially young adults. The extraction of impacted teeth is part of dentoalveolar surgery, which is a challenging surgical procedure for a physician and a complicated intervention for a patient. The physician has to manage all issues regarding the third molars including the possible complications. The professionalism of treatment is guaranteed via practical experience and theoretical knowledge of all aspects of third molars. The surgical treatment can bring on complications caused by numerous factors, e.g. specific reactions of a patient to anesthesia and nausea. Our aim is to prevent complications actively as well as to find a fast professional solution should some complications occur (14).

The most common post-operative complications are as follows:

1. Alveolitis sicca
2. Infection
3. Bleeding
4. Innervation disorders
5. Radix in antro Highmori
6. Fractura mandibulae
7. Fractura tuberis maxillae
8. Other

Postoperative complications

The incidence of postoperative complications related to the extraction of lower wisdom teeth is 2.6–30.9 % (12). The incidence is influenced by patients' age. Patients up to 30 years of age are affected by complications in 11.8 % while patients over 30 years of age are affected in 21.5 %. The gender ratio is almost the same while women are affected slightly more frequently. The morbidity associated with surgical treatment of wisdom teeth increases with age (6, 12). The bone structure is more elastic and the blood supply as well as healing capacities are better at young age. The latter fact explains why it is appropriate to extract lower impacted wisdom teeth while the patient is young. Surgical extraction is a common procedure among young adults; the incidence of complications is low. Postoperative complications in dentolaveolar surgery are most frequently associated with the extraction of lower wisdom teeth (12, 14).

Alveolitis sicca

Alveolitis sicca belongs to the most frequent complications after third molar surgery and it occurs in 3 % of cases. It is characterised by delayed postextraction pain (two or three days after extraction). The pain is impulsive and radiates to chewing muscles, bone, teeth, or into ear and temporal area. Seizures can last for hours.

Delayed pain initiation is related to gradual degradation of the coagulum filling the bone wound or with the fact that the coagulum is missing as in case of alveolitis sicca. It is caused by bulky coagulum, duration of operation or necessity to make bone dissection. It can lead into contusion, and if the toilette is not perfect, bone remains in the wound. The reduction in healing capability is brought on by an increase in the ratio of compact bone to spongious bone. This is why the complications of lower third molars are more common (14).

Alveolitis sicca occurs most frequently in effect of excessive irrigation of the socket after extraction, tobaccism, long duration of the procedure, influence of vasoconstrictive substances in local anesthetics and oral contraceptives (2, 14).

While in the past, oral contraceptives were related to alveolitis sicca after third molar extraction, many current studies show the opposite. The relation of this postoperative complication is reasonable only in drugs with high concentration of hormones while nowadays, they are used only occasionally. The relationship between the new generation of oral contraceptives (containing low levels of hormones) and the incidence of dry

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socket has not been proved. The influence of oral contraceptives on alveolitis sicca was explained by fibrinolytic effects of estrogens on the coagulum (8, 10). When compared to men, in women, the fibrinolytic influence of estrogens increases the incidence of alveolitis sicca after surgical extraction of third molars four-fold (13).

Infection

Complications associated with infection such as purulent secretion and difficulties in opening the mouth manifest as pain in the postextraction socket. In some cases, the symptoms are associated with fever and lymphadenopathy (14).

Postoperative infection occurs in 2.6 % (9), and its incidence is more frequent in patients with malhygiene or immmunosuppresed patients. Further factors potentially bringing on the occurrence of postoperative infection include the presence of pathologic process during surgical extraction (e.g. chronic pericoronitis) aggressive surgical procedure, deep impaction and malefic location of third molar (11, 16). Systemic and local antibiotics, oral antimicrobial lavage and adequate irrigation during the operation are associated with lower incidence of complications related to infection (8).

Bleeding

Bleeding after extraction is not a common complication, it occurs in 1.5 %. Its causes are the same as those related to extraction of other teeth. It occurs most frequently after the expiration of local anesthetics, i.e. after the recovery of circulation in disrupted vessels in mucosa. This is often enabled by patient's inadequate oral lavage.

Innervation disordes

The fact that third molars are localized close to the mandibular canal can result in oppression of the canal after the extraction. In very rare cases, namely when the radixes are around the canal, the extraction of such teeth can result in disruption of vessels and nerves with consequent bleeding and anesthesia. It can also result in defective function of the lingual nerve, which is very close the internal surface of mandible especially when the third molars are lingually disposed. The latter situation brings on a sensory disorder of the innervated half of the tongue as well as partial mobility disorder (14).

Paresthesia is more common than anesthesia or hypesthesia. It manifests as burning or itching sensations as well as swelling sensation in the region innervated by the mental nerve (1, 3, 4).

These changes can be reversible or irreversible.The defective function of the lingual nerve occurs in 0.5 % of cases and that in the inferior alveolar nerve occurs in 1.1 % (7).

Radix in antro Highmori

The radixes of the upper third molars can extend into antral cavity. This is why the radix or even the whole tooth can be pushed into the maxilar sunus especially in effect of aggresive surgical procedures (5, 12, 15).

Fractura mandibulae

The risk of the possible fracture is high in the presence of atrophic or teethless mandibula. Under the latter condition, the impacted molar brings on inflammatory complications and thus the necessity of extraction. The angle between the mandible and impacted third molar is the locus minoris resistantiae and it may result in postoperative fracture of madibula (16, 17).

Fractura tuberis maxillae

This complication is very rare. It occurs in 0.1 % and is associated with ankylosis of the upper third molars (14).

Other complications

It is possible to break surgical instruments during the surgical procedure (drills, needles, etc.) It is important to appeal on the proffesionality of surgeons. If this happens, it is neccesesary to perform an x-ray and to disscuss the complication with the patient (14).

Conclusion

In order to influence the cooperation and compliance of patients it is crucial to counsel each patient regarding the expected course of the procedure and possible complications.

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