A CASE OF TOOTHACHE FOLLOWING A CALDWELL-LUC ANTROSTOMY

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INTRODUCTION

The commonest symptom which causes patients to seek dental care is "toothache", a term used by the laity to describe a variety of types of pain which may have several causes. The most common causes of toothache are dental caries, gum inflammation including acute periodontitis, acute dental abscess, acute periapicalitis associated with impacted and/or partially erupted teeth, acute ulcerative gingivitis; dry socket, complicating a dental extraction, and other causes of pulpal inflammation.

Other less common causes of toothache include acute maxillary sinusitis, cracked tooth syndrome, herpes zoster infection, metastatic carcinoma to the jaws, sickle cell disorder, drug therapy and idiopathic trigeminal neuralgia and atypical odontalgia. In the vast majority of cases, the patient's description of his symptoms makes diagnosis of the likely cause easy.

The Caldwell-Luc operation is an intra-oral procedure which provides access into the maxillary sinus for a variety of clinical indications. One of the known risks of this procedure is the possibility of damaging the roots of adjacent teeth. A search of the literature in the last ten years, however, failed to yield any report of toothache associated with this procedure. We report one such case.

CASE REPORT

A 44-year-old man was seen at the Dental Clinic of the Komfo Anokye Teaching Hospital (KATH) complaining of pain in the upper right anterior teeth, of three weeks duration which was worse at night and not localized to any particular tooth. It had been increasing in severity during this period. Hot and cold stimuli made the pain worse. There was no known history of trauma to the teeth.

His past medical history revealed that twelve months previously he had a right maxillary antrostomy via a Caldwell-Luc operation for a "sinus complaint". He was generally well with no sign of anaemia or jaundice.

Oral examination revealed a well kept mouth with no obvious sign of active dental disease in the affected area. Palpation, however, elicited a localized area of tenderness of the mucosa above the roots of the right upper lateral incisor, the canine and the first premolar teeth. These three teeth were also tender to percussion, the canine being more especially so.

A periapical X-ray showed an oblique fracture of the apical third of the root of the canine, which was observed to be close to the floor of the maxillary sinus. (See figure 1a).

Figure 1a Periapical X-ray showing oblique fracture of the root of upper right canine tooth

A diagnosis of pulpitis due to iatrogenic injury to the canine during the antral operation was made.

Treatment consisted of pulp extirpation and root filling of the canine followed by apicectomy to remove the fractured apical fragment. A retrograde amalgam filling was also done. (See figure 1b). this resulted in a complete resolution of his symptoms.

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DISCUSSION

The maxillary sinus is a pyramidal cavity within the maxillary bone. The floor of the sinus lies about one centimeter below the level of the nasal cavity in adults and is formed by the alveolar process and part of the palatine process of the maxilla. The roots of the premolar and molar teeth may project into the sinus cavity. As the size of the sinus varies considerably, this relationship can also vary and the sinus may extend posteriorly to the third molar tooth and anteriorly to the canine tooth.\(^7\)

The Caldwell-Luc operation in usually carried out via a sublabial incision through mucosa and perios- teum in the canine fossa running horizontally from the zygomatic buttress to the incisor regions of the same side. A mucoperiosteal flap is raised until the infraorbital foramen and nerve are identified.\(^8\) An antrostomy high above the roots of the canine and premolar teeth is carried out by removing bone with a chisel, gouge or bur from the anterolateral wall of the maxillary sinus. Accidental injury of roots of adjacent teeth may occur during this procedure as was the case here. It is thus important that surgeons exercise care when carrying out Caldwell-Luc operations so as to avoid this complication.

One way of minimizing this risk is the placement of radio opaque markers in the labial sulcus above the presumed apices of adjacent teeth while preoperative periapical x-rays are taken to show the relation of the root apices to the floor of the maxillary antrum. The position of the roots in relation to the radio opaque marker can be determined. The surgeon is then able determine the safest area for bone removal during the operation.

In the case reported here, the patient did not associate the ENT operation with his toothache. The link was established through the past medical history, after the usual causes of toothache had been eliminated. Careful history taking and a thorough and systematic examination are therefore essential if diagnostic errors are to be avoided.

In diagnosing toothache, attention should be paid to the following characteristics of the pain: site of the pain; duration, radiation to other sites; severity, time of onset, precipitating factors and other associated symptoms. In addition the past medical history of the patient and any current or past drug therapy may provide useful information. The views of the patient concerning the cause of the pain may also be a useful guide. More importantly, patients’ complaints are not to be treated lightly even when the common clinical signs are not present.

REFERENCES


