

A simple technique for localizing a broken dental needle in the pterygomandibular region

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Abstract

A simple technique to reproduce the radiographic position of a broken needle and that of the localizer is described. The ability to reproduce their positions repeatedly greatly facilitated the retrieval of the broken needle.

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Introduction

A broken dental needle embedded in the pterygomandibular region is a possible complication of an inferior dental nerve block injection. Blum¹ reported 100 cases of such incidents over a period of 15 years from 1914 to 1928. A more recent survey by Fitzpatrick² reported only 6 cases over a period of 10 years. Refinement in injection techniques and improvements in needle metallurgy over the years have contributed to a safer inferior dental nerve block. Consequently there is less opportunity for clinicians to gain experience in managing such a complication.

This paper reports a simple technique to localize a fractured dental injection needle in the pterygomandibular space region. Accurate localization is important for a successful retrieval. However, the localizer is only as useful as the accuracy of the method to reproduce the radiographic positions of the localizer and that of the embedded needle during the operation. The ability to reproduce their radiographic positions is important because the localizer may have to be removed and re-inserted during the surgery to facilitate access.

The position of the localizer is governed by the gape and the path of insertion of the localizer. The

gape also influences the position of the broken needle. Reproducibility of the positions of the localizing and the broken needle demands that the gape and the path of insertion of the localizer can be precisely repeated.

Case report

Method to reproduce a constant gape and path of insertion

In the case under review, it was almost impossible to reproduce the exact gape with a conventional mouth gag or prop. This problem was overcome by fabricating a custom-made mouth prop from dental impression compound. With the mouth wide open, a suitably moulded block of softened compound was placed between the contralateral upper and lower posterior teeth. An ordinary Mackesson prop was then placed on the ipsilateral side and the patient was instructed to close on the prop and the compound block. This registered the occlusal surfaces of the teeth on the compound block. The compound block now acted as a fabricated prop which when reinserted into the mouth would reproduce the same gape every time.

The next step was to ensure a constant path of insertion of the localizer. An ordinary, standard, long (42 mm) dental injection needle with its hub fitted into its casing was used as a localizer. A portion of the casing was cut off so that when the needle was returned to the casing, part of the needle protruded. The casing was attached to a strip of impression compound which was anchored onto the ipsilateral upper molars. The indentation on the compound ensured that the position of the casing could be reproduced. The needle was inserted through the casing until the hub engaged the casing. The attached casing guided the localizer along a fixed path to the pterygomandibular space region (Fig. 1, 2).

With the mouth held open by the prefabricated prop and the localizing needle inserted in the direction of the embedded needle through the

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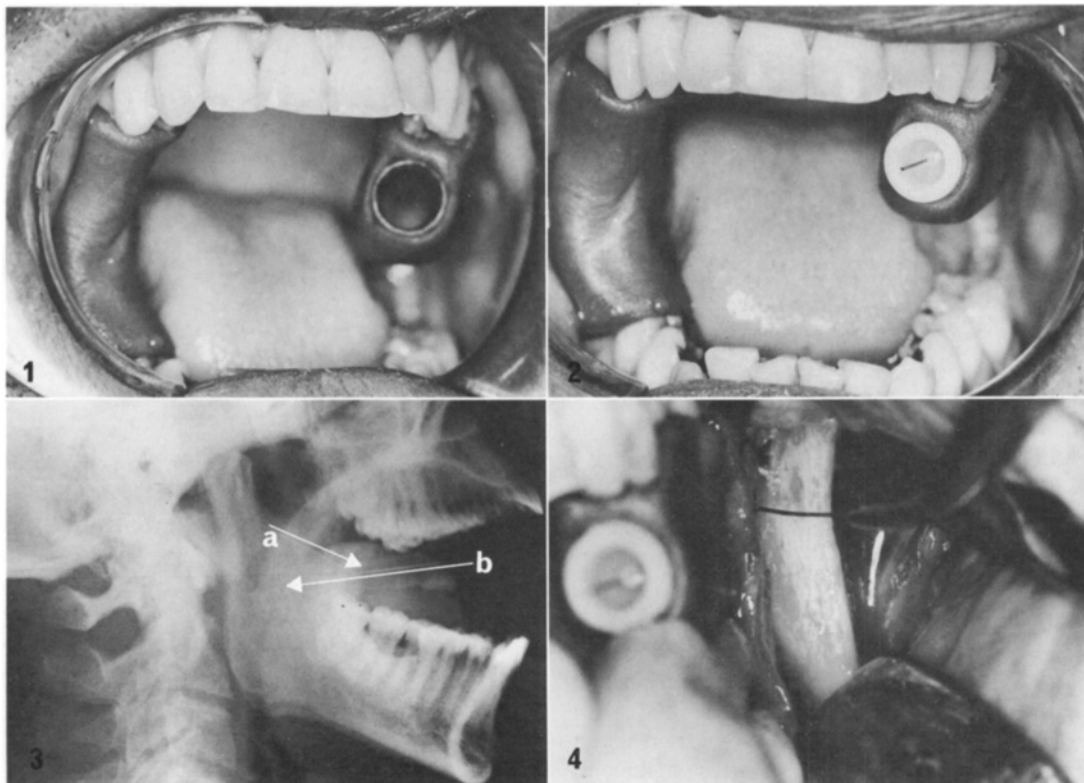


Fig. 1.—Mouth held open by prefabricated prop on the contralateral side. The casing was attached by compound to the ipsilateral upper teeth.

Fig. 2.—The localizer inserted through the truncated casing.

Fig. 3.—Lateral skull radiograph showing the embedded broken needle (a), and the localizer (b).

Fig. 4.—The broken needle retrieved at operation.

anchored casing, radiographs were taken (Fig. 3). If the localizer did not meet the broken needle, the localizer was removed and the casing arrangement remounted. The localizer was then reinserted.

The same gape and path of insertion of the localizer at the taking of the radiographs were reproduced during the operation. The pterygomandibular space region was exposed through a vertical ramus incision. By dissection along the shaft of the localizer, the embedded broken needle was reached and retrieved (Fig. 4).

Summary

A technique for localizing an embedded broken needle using a fabricated mouth prop and standard long dental needle with its truncated casing has been described. With this method, locating the embedded needle during operation was more predictable as the radiographic positions of the two needles could be reproduced during the surgery.

The advantages of this method over existing methods for localizing broken needles are:

1. Accurate reproducibility of the positions of the embedded and the localizing needles.
2. The use of readily available dental materials.
3. It does not require an X-ray machine in the theatre.
4. It dispenses with cumbersome devices such as orthodontic bands and metal detectors.³

References

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