MIGRATION OF BROKEN DENTAL NEEDLE THROUGH THE INTERNAL JUGULAR VEIN IN THE PARAPARYNGEAL SPACE

CPT Jeffrey Teixeira, MD; ZLT Lauren Kecskes; CDR Wayne Cardoni, DO; COL George Coppit, MD
Department of Otolaryngology-Head & Neck Surgery
Walter Reed National Military Medical Center, Bethesda, MD

Abstract

Objectives: 1) Report on the rare occurrence of a migrating broken dental needle into the parapharyngeal space; 2) demonstrate the propensity for foreign objects to migrate; 3) understand the role of preoperative imaging; and 4) understand the role of surgical exploration.

Study Design: Case report.

Methods: Review of clinical case records.

Results: We report on a 48 year old male who underwent a dental procedure in November of 2014 with local anesthetic using a 30G needle. During the procedure, it was noted that the needle used was missing. A plain film x-ray was performed which demonstrated the needle at the level of the condylar head. Initial attempts at extraction were unsuccessful and the patient elected to not have the foreign object removed. Over the course of two years, CT scan imaging revealed migration of the dental needle into the right parapharyngeal space, through the internal jugular vein and abutting the posterior entrance to the jugular foramen. The patient underwent surgical exploration through a transcervical approach with successful extraction of the 30G needle without significant hemorrhage or neurovascular compromise.

Conclusions: Our case is the third reported case of a broken dental needles migrating into the parapharyngeal space in the medical literature. In our case, the needle migrated through the internal jugular vein and abutted the posterior wall of the jugular foramen. Given previously reported case of neurovascular compromise secondary to foreign object in the parapharyngeal space and propensity for further migration, our case demonstrates the importance of surgical exploration with successful recovery.

INTRODUCTION

• The parapharyngeal space is a pyramidal structure that contains essential neurovascular structures including internal carotid artery, internal jugular vein, cranial nerves IX-XII and lymphatics.
• Boundaries are base of skull, deep cervical fascia, medial pterygoid muscle and hyoid bone and the space communicates with the retropharyngeal space which can pose as a potential route of infection spread to the mediastinum and cervical spine.
• Previous cases of migratory foreign bodies to the parapharyngeal and posterior cervical space have highlighted the necessity for surgical exploration.
• Nature of soft tissues and underlying anatomy means preoperative imaging is essential in localizing the foreign body.

CASE DESCRIPTION

• 48 year old man who had dental procedure in November 2014 under local anesthesia administered via 30G needle.
• During the procedure it was noted the needle used was missing. Plain film x-ray demonstrated needle was at the level of the condylar head.
• Initial extractions were unsuccessful and patient elected not to continue with further attempts at that time.
• Subsequent CT scans over the next two years revealed migration of the needle into the right parapharyngeal space, through the internal jugular vein and abutting the posterior entrance to the jugular foramen.
• Surgical exploration through transcervical approach proved successful, extracting the needle without significant hemorrhage or neurovascular compromise.

DISCUSSION

• Cases of migrating dental needles are quite rare. This case is the third reported thus far.1
• Retained foreign bodies in this region tend to migrate, in some cases less than 4 weeks, posing significant risk to adjacent neurovascular structures hence necessitating removal.4
• Most cases proceeded with either intraoral2 or transcervical1 approach towards removal after performing CT scan to localize the object or using image guided surgical techniques as plain films provided insufficient information.3
• Previous studies have proposed migration may be aided by esophageal peristalsis, carotid pulsations and tissue retraction secondary to reactive fibrosis, inflammation and infection.5

CONCLUSION

• This is the third reported case of a broken dental needle migrating into the parapharyngeal space and the first to enter the right jugular vein
• The risk of damage to important neurovascular structures necessitates surgical exploration and recovery. Imaging is important to localize the foreign body.

REFERENCES

1. Ho AS, Mezosias S, Dannen EJ. Management of intrascular needle migration into the posterior cervical space. Auris Nasus Larynx 2011;38:559-564