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Accidental Aspiration of Endodontic Instrument: An Endodontic Nightmare- A Case Report

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Abstract
Endodontic mishaps or procedural accidents are those unfortunate occurrences that happen during endodontic treatment, some owing to inattention to detail, others totally unpredictable. Aspiration or ingestion of endodontic file during treatment though uncommon, potentially is dangerous mishap. The aim of this case report is to highlight the complications, prevention & management of instrument aspiration.
Key words: *Aspiration, endodontic file, endodontic mishaps.*

INTRODUCTION

Like any other field of dentistry, a clinician may face unwanted situation during root canal treatment which could adversely affect the prognosis of endodontic therapy. This procedural accidents are termed as endodontic mishaps.

Endodontic mishaps may have dento-legal consequences. Thus their prevention is the best option both for patient and dentist. Knowledge of etiological factors involved in endodontic mishaps is mandatory for their prevention. Therefore recognition of a procedural accident is first step in its management.

The aim of this presentation is to discuss such uncommon but potentially dangerous mishaps & also complication & prevention of such accidents.

CASE REPORT

A 20yrs old male patient was referred to the Department of Conservative Dentistry & Endodontics, Bharati Vidyapeeth Dental College, Sangli with the chief complaint of accidental swallowing of dental instrument during dental procedure. Patients history revealed that he was undergoing root canal treatment with lower right molar in private dental clinic during which endodontic instrument was accidentally swallowed. On extraoral and intraoral examination, no relevant findings associated with endodontic instrument were observed.

Patient was anxious and complaining of pricking sensation in the throat. Patient was immediately taken to the radiology Department, Bharati Vidyapeeth Medical College, and Hospital, Sangli and advised to undergo neck, chest and abdomen x-rays. Neck x-ray revealed no foreign object but chest and abdomen x-ray showed presence of endodontic file in the left side of abdomen.

After seeking general surgeon's opinion patient was recalled after two days for follow up. Meanwhile patient was advised to eat plenty of non fibrous food (Bananas) along with fluids and also informed to contact immediately in case of any discomfort.

Fortunately, next day patient passed the endodontic file. After two days, follow up x-ray was taken which revealed presence of no endodontic file. Patient was completely asymptomatic therefore endodontic therapy was completed during the same visit. If the patient would not have passed the file, other option was gastroscopic retrieval of endodontic file.

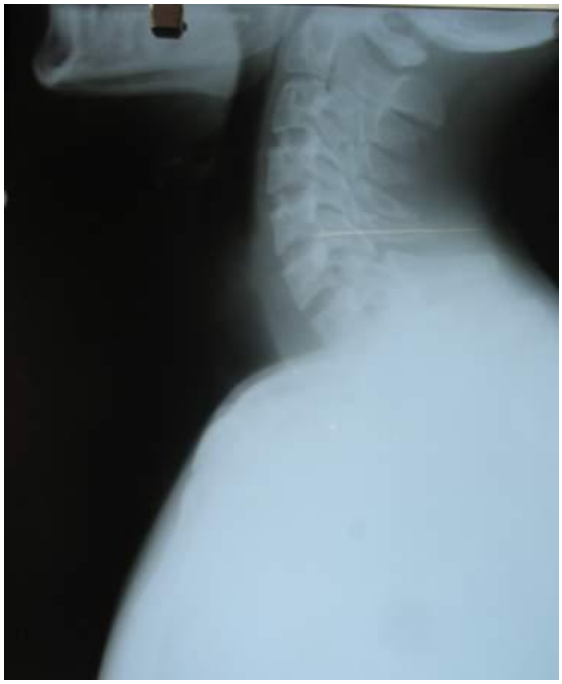

Figure No. 1: Neck x- ray

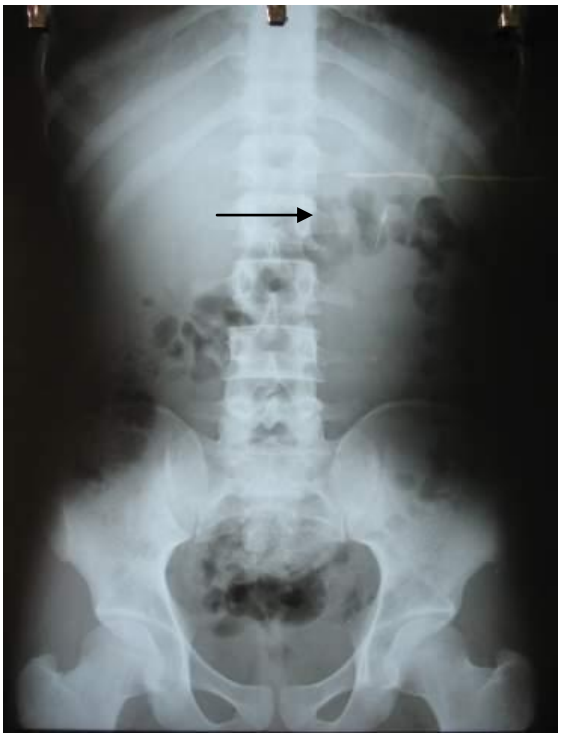

Figure No. 2: Chest & abdomen x- ray showing endodontic file in the left side of abdomen.

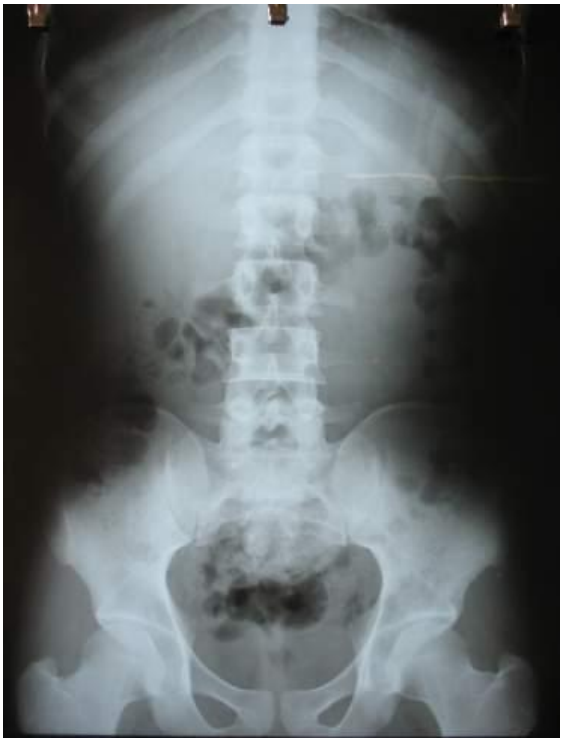

Figure No. 3: follow up Chest & Abdomen x- ray shows no file**.**

DISCUSSION

Aspiration or ingestion of foreign object is a complication that can occur during any dental procedure. Endodontic instruments used in absence of rubber dam can easily be aspirated or swallowed if inadvertently dropped in the mouth[1.] Once an instrument is lost into the oropharynx, it is critical to immediately determine whether it has entered the gastrointestinal tract or the respiratory tract [2]. THOMPSEN et al reported an unfortunate result of doing endodontic therapy without the use of rubber dam. Patient developed appendicitis from the ingested file and required surgery [3].MEJIA et al reported a situation in which patient swallowed a rubber dam clamp that was accidentally dropped in the mouth [4].

Recognition in these cases is perhaps better termed suspicious because sometimes aspiration may not be recognizable. If an instrument aspiration or ingestion is apparent. the patient must be informed and taken immediately to a medical emergency facility for examination.This can begin with the acquisition of anteroposterior and lateral chest, lateral neck and supine abdominal radiographs to complete the evaluation from the nasopharynx to the rectum [2].

Fortunately, in this case the instrument was radiopaque and visible with plain radiography. It is also helpful to bring a sample file along so that the physician who may be searching for an instrument has a better idea of size and shape of the instrument. [2]

Generally, endodontic instruments that enter the Gastrointestinal tract pass asymptomatically and atraumatically within 4 days to 2 weeks (Govila 1979, Lyons & Tsuchida 1993).The current case was also aymptomatic, and passage occurred rapidly. Careful monitoring with serial radiological follow- up for signs of the foreign body migration combined with a high – fibre diet is generally the preferred management protocol (Govila 1979).

Entry of foreign object to the respiratory tract is potentially life threatening and the object requires prompt removal (Zerella et.al1998, ulku 2005).The most common signs and symptoms of foreign body aspiration include coughing, wheezing and decreased breathing sounds (sersar et.al 2006) [2] . Dentist should also instruct patients that if an object falls on the

tongue , they should try to supress the swallowing reflex and turn their heads to the side [5] .

Correction in the dental operatory is limited to removal of objects that are readily accessible in the throat. High volume suction, particularly if fitted with a pharyngeal tip can be useful in retrieving lost objects. Hemostats and cotton pliers can also be used. Once aspiration has taken place timely transport to a medical emergency facility is essential. The dentist should accompany the patient.

Prevention can be accomplished by strict adherence to the use of rubber dam during all phases of endodontic therapy [6] . If a rubber dam clamp is placed on the tooth to be treated before rubber dam placement, aspiration of loosened clamp can be avoided by attaching floss to the clamp before placement. The dentist may also prevent cast restoration being aspirated by using dental floss[7,8] . Certain cases where rubber dam cannot be placed, the floss with adequate length should be tied to the endodontic instrument. So that, if an endodontic instrument is accidentally dropped in the mouth, can be easily retrieved with the help of floss. [9]

Strategies to Prevent Aspiration

• Use a rubber dam.
• Use a gauze throat pack.
• Use high velocity evacuation.
• Use Washfield technique.
• Use a high viscosity type of impression material.
• Use a custom tray, with an open palate design for maxillary arch impression.
• Observe the entire impression procedure.
• Use a more upright position if possible.
• Provide thorough instructions to the patients.[5,6]

Table 1: DO'S & DONT'S following instrument aspiration

DO'S	DONT'S
Inform the patient	Panic
Positive counseling	Ignore the mishap
Take neck, chest & abdomen x rays	Advice purgative drugs
Follow up	
Surgeon's opinion	

CONCLUSION

Strict adherence to the standard of care for endodontic therapy would prevent such mishaps. It is also true that experience can teach many lessons if one pays attention, put another way, we learn from our own & others mistakes, and that can be true of endodontic mishaps as well.

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