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CASE REPORT

ENDOSCOPIC MANAGEMENT OF ACCIDENTAL INGESTION OF ENDODONTIC FILE: A CASE REPORT

[1]Hamza Alsharief, [2]Adel Alharbi, [3]Feras Aalam and [4,*]Ali Alsharif

[1,3]Department of Restorative, Consultant, Dental Center, Alnoor Specialist Hospital
[2]Department of Pedodontics, Consultant, Dental Center, Alnoor Specialist Hospital
[4]Department of Endodontics, Saudi Board Resident, Dental Center, Alnoor Specialist Hospital

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ABSTRACT

In this clinical case report we present case of swallowing of an endodontic hand file in 13 years old child. And discuss the validity of dentist action following the accident.

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INTRODUCTION

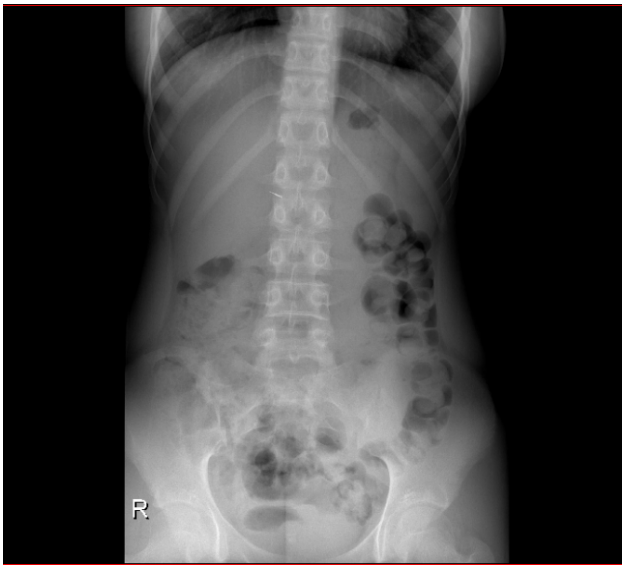
Patient safety is one of most important medico legal issues of dental treatment (Fishelberg and Hook 2003). Aspirationand ingestion of foreign bodies are well documented in literature. All dental procedures, from dental examination (Oncel, Apiliogullari *et al*. 2012) to surgical tooth extraction(Obinata, Satoh *et al*. 2011) and implant placement(Souza, Statkievicz *et al*. 2015), have the potential of accidental serious complication. In root canal treatment, the risk is high but, fortunately is preventable. Rubber dam have been used for more than century and a half to improve treatment outcome(Ahmad 2009). And isolation with rubber dam is must/mandatoryfor performing root canal treatment and in dental procedures that hazer patient`s health for example removal of old or make new amalgam restorations (Kremers, Halbach *et al*. 1999). Rubber dam dramatically decrease the incidence of accidental foreign body ingestion/inhalation (Susini, Pommel *et al*. 2007) (Bondarde, Naik *et al*. 2015) but not immune the patient against these iatrogenic procedures. In rare cases, ingestions of lip clip of apex locator (Dionysopoulos 2016) and headof dental mirror (Oncel, Apiliogullari *et al*. 2012) are nothing to do with RD. all preventive measure should be taken to assure patient safety (Fredekind, McConnell *et al*. 1995). All dental school incorporating rubber dam in their curriculum but, unfortunately most graduate student not use it for unjustified reasons (Anabtawi, Gilbert *et al*. 2013).

Corresponding author: Ali Alsharif,
Department of Endodontics, Saudi Board Resident, Dental Center, Alnoor Specialist Hospital.

Ahmed *et al* 2009 mentioned more than eight reason for not to use the RD by dentist all of these issues are easy avoidable by continuous training of dentist and emphasis on importance of RD. Whiworth *et al* found that only 20% of general practitioner use rubber dam in root canal treatment (Whitworth, Seccombe *et al*. 2000). In children and young patients the frequent of rubber dam use could be even less. The Literature show that96% of swallowed cases were ingested compared to only 4% of inhaled cases (Tiwana, Morton *et al*. 2004). This percent drop to only 2% of aspirated cases for endodontic instruments (Susini, Pommel *et al*. 2007).Most of ingested cases required close observation of the patient to be sure their natural exit through GIT system. noninvasive procedures/ conservatively accounted for up to 20% and less than 1% necessitate surgical intervention (Venkataraghavan, Anantharaj *et al*. 2011), on the other hand all inhaled cases requiredpatient hospitalization and the inhaled pieces removed either by bronchoscopy or open surgery (Tiwana, Morton *et al*. 2004). The impact of legal sequences/responsibility of such case on dentist professional cannot be underestimated. In this clinical case report we present case of swallowing of anendodontic hand file in 13 years old child. And discuss the validity of dentist action following the accident.

Case Report

13-year old girl where complaining of tooth pain in lower right 1st molar. The diagnosis was symptomatic irreversible pulpitis with normal apical tissues. Root canal treatment performed without RD and during instrumentation with hand k- file size 25 of 25mm length, the patient moved her head suddenly.



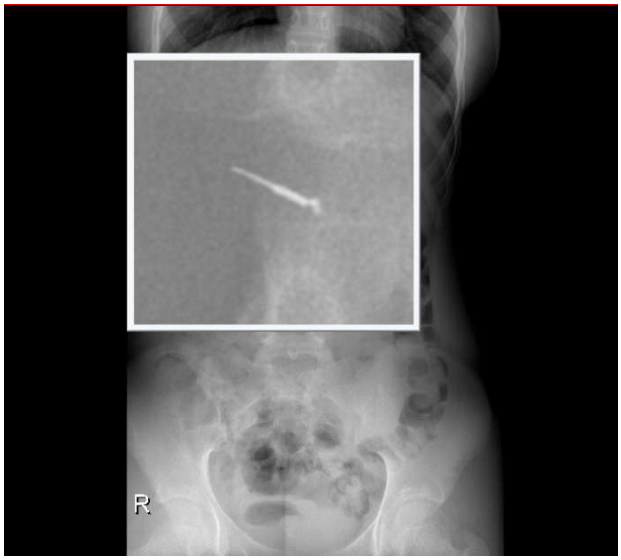


Fig. 1 and 2. Anterior posterior x-ray chest and abdominal x-ray showing the ingested file in the lower part of stomach

Due to which the doctor lost control over the hand file and get confused if the instrument in patient mouth or fallen down on clinic floor. The child was breathe and talk normally and did not mention anything abnormal. On these findings the clinician complete the visit without further obstacles and dismiss the patient at end of the visit. The treating dentist told the parents she might accidentally swallowing hand file during root canal instrumentation. The dentist advice the patient to eat cotton that could help her in case of file swallowed, and arrange to see the patient next day to complete dental procedure. Few hours later the patient suffered from severe abdominal pain that lead her to visit the emergency unit at alnoor specialist hospital. The physician in-charge order anterior-posterior x-ray chest and abdominal x-ray. Which confirm presence of radiopaque foreign body in lower part of stomach. The emergency team contacted gastroenterologist in charge who advised to remove the foreign body with endoscope as soon as possible. The patient admitted to operating room 12 hours after accident and under sedation theendoscopist was successful in removal of the endodontics' file from duodenum with no further complication.

DISCUSSION

The incidence of foreign body ingestion is 0.0037% per year (Obinata, Satoh *et al*. 2011). The Ingested cases of foreign body in dental practice are more common than inhaled cases.

More than 90% of ingested cases need close medical observation (Bondarde, Naik *et al*. 2015) and the foreign bodies expel through GIT without any complication within3days to 2 weeks (de Souza, Schuldt Filho *et al*. 2012). Endoscopy is 1st choice of surgical management which consider an easy and straight treatment plan (Kramer, Lerner *et al*. 2015) which involved in up to 10%. In rare cases laparotomy is indicated (Klingler, Smith *et al*. 1997). There is clear guide lines for endoscopic management of retrieval of foreign bodies in adult (Birk, Bauerfeind *et al*. 2016) but not for children (Kramer, Lerner *et al*. 2015). Physician decision to use endoscopy in child is case dependent. The Size ,sharpness and stiffness of swallowed body may have a role (Wandera and Conry 1993, Obinata, Satoh *et al*. 2011)in addition to the presence of intestinal abnormality (Guelfguat, Kaplinskiy *et al*. 2014). This could be related high risk of intestinal perforation by sharp object (Ikenberry, Jue *et al*. , Bhatnagar, Das *et al*. 2011) (Ikenberry, Jue *et al*.) and easy grasp of large size foreign body. The treated dentist should consult the physician even if the patient has no sig or symptoms. Unfortunately, this is did happen in this case. Shortly, the patient suffered from abdominal severe pain. In emergency department, they requested anterio-posterior view. The radiograph is an essential diagnostic tools in determine position and characteristics of FB (Laya, Restrepo *et al*. 2017). Other investigations are within normal readings. The instrument was visible and clear on the radiograph that located at lower part of stomach. The gastroenterologist decided immediate removal with endoscopy. The presence of abdominal pain may be sig of intestinal injury. The gastroscopy procedures was successful in removal the endodontic hand file from first time.

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