

# ENDOSCOPIC REMOVAL OF SUPERNUMERARY TOOTH FROM THE NASAL CAVITY OF A CHILD: A CASE REPORT

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## SUMMARY

**Introduction.** A case report showing the removal of a supernumerary tooth from the nasal cavity by means of an endoscopic approach is presented.

**Materials and methods.** A 9-year-old healthy child presented to our department because of the right central incisor which appeared clinically rotated. The observation of orthopantomography revealed the presence of a supernumerary tooth in the anterior maxilla with the crown positioned towards the nasal floor. The maxillary CT demonstrated a quite close relationship of the tooth with the nasal cavity, so a nasal approach was planned.

**Results.** Under general anesthesia the supernumerary tooth was removed by means of an endoscopic approach from a nostril. During the extraction the adjacent structures were unharmed. The postoperative course was uneventful.

**Conclusions.** This case report suggests that in case of supernumerary teeth positioned close to the nasal cavity, transnasal endoscopy may represent a valid alternative to more demolishing traditional surgery.

**Key words:** ectopic tooth; supernumerary; nasal floor; extraction; transnasal endoscopy.

## Introduction

The presence of an ectopic tooth into the nasal cavity is a quite rare event (Sanei-Moghaddam A. et al. 2009, Lee FP. 2001). However it is important to identify these teeth, which can be supernumerary, deciduous or permanent, in order to avoid possible complications and pain (Sanei-Moghaddam A. et al. 2009, Lee FP. 2001). Epistaxis, paranasal sinusitis, nasal septal deviations, nasal septal abscess, and oral-nasal fistula, may occur in case of persistence and nasal eruption of the ectopic tooth (Lee FP. 2001). It is also possible that it acts as a nidus for mineralization in the interested nasal cavity, gradually surrounded by calcified material and chronic infected tissue (Lee FP. 2001, Coonar A, et al. 1996). The diagnosis of nasal teeth is mainly based

on clinical and radiographic examination. Quite often intranasal teeth may be asymptomatic and may incidentally be recognized during routine examination (Kim DH. et al. 2003).

Clinically, an intranasal tooth may be completely or incompletely embedded in the nasal mucosa, and when diagnosed its treatment is early extraction because of its potential morbidity.

Extraction of the ectopic tooth with the aid of endoscopy presents some advantages such as good illumination, clear visualization and precise dissection (Kim DH. et al. 2003, Lee FP. 2001). Furthermore this technique which represents an alternative to more demolishing traditional surgery, allows a reduced postoperative morbidity and a shorter hospitalization period (Sanei-Moghaddam A. et al. 2009, Lee FP. 2001, Kirmeier R. et al. 2009, Lin IH. et al. 2004). The present case report is about the removal of a supernumerary tooth from the nasal cavity by means of an endoscopic approach.

## Case report

A 9-year-old child presented at the Department of Dentistry of “University Tor Vergata” (Rome) because of the right central incisor which appeared clinically rotated. The patient was asymptomatic, denied any pain and its general medical history was not significant with no previous history of maxillofacial trauma or surgery.

An orthopantomography was prescribed and its observation revealed the presence of a radiopaque tooth-shape mass lesion, probably a supernumerary tooth, in contact with the rotated central incisor and protruding the floor of the right nasal cavity (Fig. 1)



**Figure 1**

The orthopantomography revealed the presence of a radiopaque mass lesion in contact with the rotated central incisor and protruding the floor of the right nasal cavity.

A computed tomography (CT) was necessary to evaluate the real position of the presumed supernumerary tooth and its relationship with the adjacent structures (Fig. 2).

The CT examination confirmed that the mass lesion resembled an inverted tooth, considered supernumerary because the other teeth were all present, and showed that its crown was positioned towards the nasal cavity, embedded by nasal mucosa and quite under the septum. In collaboration with the Department of Otolaryngology of “University Tor Vergata” the actuation of an endoscopic approach was evaluated.



**Figure 2**

A computed tomography (CT) revealed the relationship of the presumed supernumerary tooth with the adjacent structures, such as nasal floor.

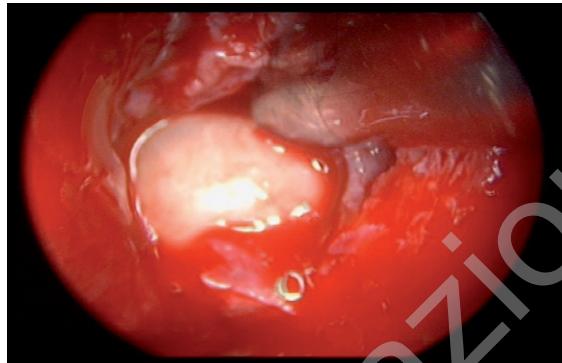
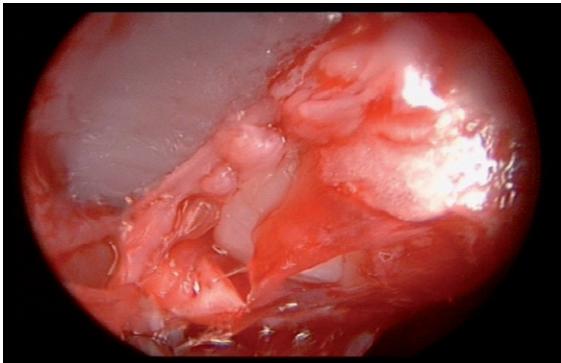
The patient underwent trans-nasal endoscopy from the right nostril to remove the supernumerary tooth under general anaesthesia with oral endotracheal intubation. The tooth was completely embedded by nasal mucosa so an incision of the nasal floor was done. A quite careful inspection was necessary to find the exact position of the tooth.

Once the tooth was localized, the covering periostium was removed (Figs. 3, 4), the tooth was dislocated from its site of impaction (Figs. 5, 6) and it was avulsed with forceps through the right nostril (Figs. 7, 8). During the extraction the adjacent structures were unharmed.

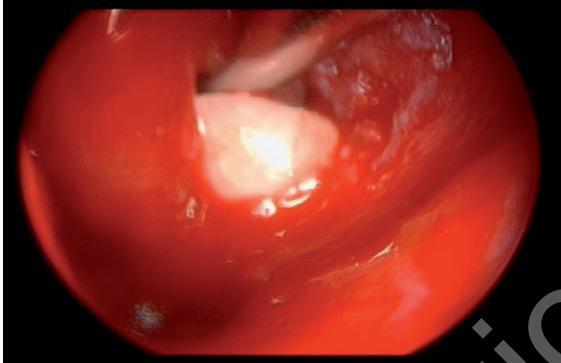
Mucosa of the nasal floor was sutured with a resorbable material, and a pad was inserted into the right nostril. Amoxicillin 1 gr. twice/day, dessosimeton 4 mg. and paracetamol 1gr when needed was prescribed. Four days later the pad was removed. Postoperative course was uneventful. One month later an orthodontic treatment could start to resolve patient’s malocclusion.

## Discussion

The presence of one or more teeth into the nasal cavity may be either the consequence of an aberration of the regular dentition or can be supernumerary (Kim DH. et al. 2003, Kirmeyer R. et al. 2009). The etiology of intranasal teeth is not clear; poten-

**Figures 3,4**

Once the tooth was localized the covering periostium was removed.

**Figures 5,6**

The tooth was dislocated from its site of impaction and avulsed.

**Figure 7**

The tooth avulsed from the right nostril.

**Figure 8**

The supernumerary tooth.

tial causes include cleft palate, maxillofacial trauma, Gardner's syndrome and cleidocranial dysostosis (Lee FP. 2001, Lin IH. et al. 2004, Moreano EH. et al. 1998). None of these factors were

identified in the described case. In fact idiopathic eruption of a supernumerary tooth into the nasal cavity forms a separate entity, whose biological and genetic mechanisms remain largely unexplored

(Kirmeier R. et al. 2009, Lin IH. et al. 2004). The present case report suggests, through the analysis of orthopantomography of the patient's mother, that hereditary factors could be involved, but further studies are necessary to demonstrate it.

Irrespective of their origin, nasal teeth can cause facial pain, epistaxis, nasal obstruction, paranasal sinusitis, nasal septal deviations, nasal septal abscess and oro-nasal fistula (Lee FP. 2001, Kirmeier R. et al. 2009). Intranasal teeth may be also asymptomatic and may be only incidentally recognized during routine examination (Kim DH. et al. 2003). The presented case is an example of such situation, even if the presence of the rotated central incisor required an immediate investigation that allowed early diagnosis and extraction.

Differential diagnoses should be considered, such as a foreign body, rhinolith, tumor, osteoma odontoma or a cyst lesion (Lee FP. 2001, Lin IH. et al. 2004). Radiographs help to differentiate between these possibilities and in particular computed tomography is a very useful means that allows to confirm the diagnosis and to facilitate surgical planning (Lee FP. 2001, Lin IH. et al. 2004).

Once diagnosed the supernumerary nasal tooth should be extracted to avoid future complications. The most common surgical techniques include the transnasal and transpalatal approaches. Operative methods should be planned considering the involvement of adjacent structures and potential complications following tooth extraction (Lee FP. 2001, Lin IH. et al. 2004).

In literature there are only few studies (Kim DH. et al. 2003, Lee FP. 2001, Kirmeier R. et al. 2009, Lin IH. et al. 2004) describing the extraction of nasal teeth by means of an endoscopic approach and they all show encouraging results.

Kim and co-workers (Kim DH. et al. 2003) performed with success this kind of surgery in a 12-year-old healthy boy who was asymptomatic and presented a 10 mm diameter mass lesion in the floor of the right nasal cavity. The patient did well postoperatively and healed uneventfully.

Lee (Lee FP. 2001) conducted a study in 13 healthy patients, aged from 4 to 39 years, presenting intranasal teeth and treated by means of endoscopic surgery. Five patients did not refer any symptom

while the other eight patients presented various problems related to the presence of the ectopic teeth, such as nasal obstruction, purulent or blood-tinged rhinorrhea. After the surgery, patients healed uneventfully and the presenting symptoms were completely relieved.

In a study by Kirmeier (Kirmeier R. et al. 2009), a 49-year-old woman underwent the endoscopic extraction of an ectopic nasal tooth through the left nostril. After the surgery, wound healing was uneventful and the patient reported full relief from her symptoms.

In the end Lin (Lin IH. et al. 2004) reported data about the extraction of ectopic nasal teeth by means of an endoscopic approach in three cases. The patients were 16, 21 and 6 years old and were all healthy. They all referred symptoms related to the presence of the ectopic teeth. After the surgery the three patients healed uneventfully without any post-operative recurrence.

The previous discussed studies and our case report suggest that in such cases a trans-nasal endoscopic approach is recommended, since it presents some important advantages such as good illumination, clear visualization and precise dissection (Kim DH. et al. 2003, Lee FP. 2001). Furthermore this technique allows a reduced postoperative morbidity and a shorter hospitalization period; these advantages could not be possible with the more demolishing traditional surgery (Sanei-Moghaddam A. et al. 2009, Lee FP. 2001, Kirmeier R. et al. 2009, Lin IH. et al. 2004).

In the described case, the removal under endoscopic guidance was performed successfully and no other methods were necessary. During the extraction the adjacent structures were unharmed and the postoperative course was uneventful.

## Conclusion

This case report suggests that in case of supernumerary teeth positioned close to the nasal cavity, trans-nasal endoscopy may represent a valid alternative to more demolishing traditional surgery.



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