Supernumerary Tooth in the Nasal Cavity

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Introduction

Intranasal ectopic dentition is a rare clinical entity. The presence of teeth has been reported in ovaries, testes, anterior mediastinum, and pre-sacral regions. In the maxillofacial region, teeth have been found in maxillary sinus, mandibular condyle, coronoid process, chin, nose, and even orbit. The conditions commonly associated with an increased prevalence of ectopic teeth include cleft lip and palate, cleidocranial dysplasia and Gardner syndrome. Intranasal teeth can cause problems such as nasal obstruction, chronic rhinorrhoea and speech problems. The most common ectopic tooth which appears in the maxillary midline is called a mesiodens. This unusual situation should be suspected in patients with nasal obstruction and unilateral fetid purulent rhinorrhoea.

Case Report

A 35 years old serving soldier presented with multiple injuries following an road traffic accident (RTA). While recovering in hospital he complained of intermittent left sided epistaxis. Nasal examination showed a whitish hard foreign body like structure lying in the floor of the left nasal cavity. The appearance suggested a rhinolith. He had a fully erupted dentition. Radiograph of the paranasal sinuses was normal. However there was a radio-opaque shadow in the left nasal cavity. During endoscopic removal of the mass it was found to be hard, conical in shape and tapering to a point. Closer inspection revealed it to be a tooth lying in the floor of the nasal cavity. The nasal tooth was lying oriented in an antero-posterior direction, the attachment being anterior. It was covered by a sleeve of nasal mucosa near the attachment at the maxillary crest. Slitting this sleeve of mucosa facilitated easy removal of the tooth. There was no bony socket. On follow-up examination six weeks later, the patient was symptom free.

Discussion

The incidence of supernumerary teeth generally affects 0.1-1% of the population. The most common location is the upper incisor area, known as the

mesiodens. The etiology of supernumerary teeth is not completely understood. One theory suggests that the supernumerary tooth is created either from a thin tooth bud that arises from the dental lamina near the permanent tooth bud or from splitting of the permanent bud itself. Another theory is that their development is a reversion to the dentition of extinct primates, which had three pairs of incisors. The hyperactivity theory suggests that supernumeraries are formed as a result of local, independent, conditioned hyperactivity of the dental lamina [1]. Heredity may also play a role in the occurrence of this anomaly, as supernumeraries are more common in the relatives of affected children than in the general population. However, the anomaly does not follow a simple Mendelian pattern.

Although the cause of ectopic growth is not well understood, it has been attributed to obstruction at the time of tooth eruption secondary to crowded dentition, persistent deciduous teeth, or exceptionally dense bone [2]. Other proposed pathogenic factors include a genetic predisposition, developmental disturbances, such as a cleft palate, rhinogenic or odontogenic infection and displacement as a result of trauma or cysts [2].

Multiple supernumerary teeth are rare in individuals with no other associated diseases or syndromes [3]. It is often associated with cleft lip and palate, cleidocranial dysplasia and Gardner syndrome. While there is no significant sex distribution in primary supernumerary teeth, males are affected approximately twice as frequently as females in the permanent dentition [4].

The extra teeth have an atypical crown with an vertical, horizontal or inverted position. They may grow and appear on the palate as extra teeth or they may grow into the nasal cavity [5]. The teeth may be asymptomatic or cause a variety of signs and symptoms, including facial pain, nasal obstruction, headache, epistaxis, foul-smelling rhinorrhoea, external nasal deformities, and nasolacrimal duct obstruction [6]. Complications of nasal teeth include rhinitis caseosa with

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septal perforation, aspergillosis, and oronasal fistula [7].

The diagnosis of nasal teeth is made on the basis of clinical and radiographic findings. Clinically, an intranasal tooth may be seen as a white mass in the nasal cavity surrounded by granulation tissue and debris. Radiographically, the nasal teeth appear as radiopaque lesions with the same attenuation as that of the oral teeth. With the bone window setting, the central radiolucency, which is correlated with the pulp cavity, may have a spot or slit, depending on the orientation of the teeth. The soft tissue surrounding the radiopaque lesion is consistent with granulation tissue found on clinical and pathologic examinations.

The differential diagnosis of nasal teeth includes radiopaque foreign body, rhinolith, inflammatory lesions due to syphilis, tuberculosis, or fungal infection with calcification, benign tumours, including haemangioma, osteoma, calcified polyps, enchondroma, and dermoid and malignant tumours, such as chondrosarcoma and osteosarcoma. However, the computed tomography (CT) findings of tooth- equivalent attenuation and a centrally located cavity are highly discriminating features that help to confirm the diagnosis.

Removal of nasal teeth is generally advocated to alleviate the symptoms and prevent complications. When an extra tooth is in the nasal cavity, the procedure is

usually a minor operation. When a tooth has a bony socket in the floor of the nose, it may be extremely difficult to extract [8]. CT is useful to evaluate the depth of the eruption site. The best time to remove the tooth is after the roots of the permanent teeth have completely formed, to avoid injury during their development.

Conflicts of Interest

None identified

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Journal Scan

Caroline M E Contant, Wim C J Hop, Hans Pieter vant Sant, Henk J M Oostvogel, et al. Mechanical bowel preparation for elective colorectal surgery: a multicentre randomised trial. *Lancet* 2007; 370: 2112-7.

Mechanical and antibiotic bowel has traditionally and often empirically been considered as a must in an elective setting for colonic and rectal anastomosis. With the stress on cut down in patient in-hospital time especially for elective procedures, the use of traditional bowel preparation protocols have been questioned. This multicentre RCT, conducted in 13 hospitals in the Netherlands between 1998 and 2004, randomised 1431 patients into control and test groups. All patients studied underwent open elective surgery requiring colonic resection-anastomosis. Patients were followed up for a mean period of 24 days with the primary end points being clinically evident anastomotic site leak or death. Secondary end points were septic complications (wound infection, urinary infection, pneumonia, and intra-abdominal abscesses) and fascia dehiscence. While routine radiological screening for anastomotic leak was not done, investigations (computed tomography, ultrasound or contrast studies) were carried out on clinical suspicion. The paper assessed that there was no difference in the rates of anastomotic leakage between the patients belonging to the test and control group (4% approx in each group), when followed for a median period of 24 days. Rates of other septic complications, fascia dehiscence and mortality did not differ between the two groups. Faecal contamination, number of days until resumption of

a normal diet and duration of hospital stay were similar in both groups. However, fewer intra-abdominal abscesses after anastomotic leakage were reported in those who had mechanical bowel preparation than in those who did not ($p=0.001$). The authors have justified their results that mechanical bowel preparation is not necessary in elective colonic surgery by quoting the above results. This study is powered by its significant numbers and randomization. It has an added advantage that the primary points and the confidence interval for comparison were significantly narrow to justify a concrete outcome. However, there are certain technical points that require consideration before this study can be applied as standard clinical practice. The fact that fewer patients had intra-abdominal abscesses after a significant anastomotic leakage if they had undergone pre operative bowel preparation cannot be ignored even though the statistical association may not be significant. The authors have not assessed the rates of leakage as per the location of anastomosis. It is known that low rectal extraperitoneal anastomosis is associated with higher rates of leakage than intra abdominal ones. This could have been avoided by double blinding the study.

This study challenges the conventional wisdom of pre operative bowel preparation in elective colonic resection and when taken in consideration with other meta-analyses, it may change the way elective colonic resection are performed.

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