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POSITIONAL VARIATIONS OF IMPACTED HYPERODONTIC TEETH

A CLINICAL AND RADIOLOGICAL STUDY

by

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INTRODUCTION

The terminology concerning hyperplasia of the dentition has been somewhat indistinct. *Thoma* (1954) and *Large* (1965) defined supernumerary teeth as those possessing normal size and shape, and accessory teeth as those which are morphologically abnormal.

Pindborg (1963) gave a logical description of the varying types. He separated a false form (hyperodontia spuria) meaning persisting deciduous teeth, from a true form (hyperodontia vera). The latter consists of dentes supernumerarii (normally developed teeth) and dentes supplementarii (atypical teeth) (Table I).

Table I

Hyperodontia spuria	—	dentes decidui persistentes
Hyperodontia vera	—	dentes supplementarii (dentes regulares)
		dentes supernumerarii

According to this arrangement the following analogous scheme has been used in the present investigation (Table II).

Table II

Hyperodontia (Hyperplasia of the dentition)	Persisting deciduous teeth
	Supplementary teeth (normal teeth)
	Supernumerary teeth (atypical teeth)

A production of additional teeth is most common in the incisive region of the upper jaw, but can be found in all parts of the jaws. *Lind* (1959) found in 1717 Swedish children a total frequency of 3,6 % while *Staphne* (1932) reported the corresponding figure of 0,9 % in a material of 48 550 persons in USA. According to *Billberg & Lind* (1965) about 75 % of the hyperodontic teeth were impacted.

Though not very common the impacted hyperodontic teeth, when they have to be removed, result in considerable surgical trouble. Therefore proper preoperative planning is of the outmost importance. Among other things this involves determination of the positional relationships of the teeth by clinical and radiological examination.

Since the reports dealing with these problems are very few, the authors will report a material gathered over a five-year period.

MATERIAL AND METHODS

The material consisted of 100 patients (40 women, 60 men), with together 129 hyperodontic teeth.

In 84 patients the age varied between 7 and 20 years (average 15 years). In the rest of the material (16 patients) the age was higher and the oldest patient was 61 years old. The distribution of the patients and the teeth in the upper and the lower jaw as well as the left and right side of the jaw, can be seen in Table III.

A thorough clinical and radiological examination was made preoperatively. Several X-rays of different projections were taken of each tooth to get a good basis for judging the position of the teeth. The following registrations were performed:

- A. The position of the crown of the hyperodontic tooth in relation to the dental arch in the horizontal plane.
 1. Palatal position.
 2. Buccal position.
 3. Situated in the dental arch.

Table III
Distribution of impacted hyperodontic tooth material

Region of impaction	Number of patients	Number of teeth		Supernum. teeth	Supplem. teeth	Supernum. and Supplem. teeth
		left side	right side			
Incisor	86	64	46	99 (2)*	11 (2)*	110 (4)*
Canine	3	2	2	3 (2)*	1	4 (2)*
Premolar	5	2	4	3	3 (3)*	6 (3)*
Molar	6	4	5	4 (3)*	5	9 (3)*
Total	100	72	57	109 (7)*	20 (5)*	129 (12)*

() * Impacted hyperodontic tooth in the lower jaw

B. The position of the crown of the hyperodontic tooth in superior/inferior relation (retention level) to the erupted neighbouring tooth (control tooth).

1. The crown situated superiorly in the upper jaw and inferiorly in the lower jaw in relation to the apex of the control tooth.
2. The crown situated between the apex and the cervix of the control tooth.
3. The crown situated inferiorly in the upper jaw and superiorly in the lower jaw in relation to the cervix of the control tooth.

RESULTS

In 29 patients (9 women, 20 men), there were two or more hyperodontic teeth at the same time.

16 patients had supplementary teeth (20). 11 of these 20 teeth were found in the incisive region, where 90 % of all the hyperodontic teeth were observed (37 in women and 73 in men).

In 8 patients hyperodontia was present in the lower jaw (12 teeth, of which 8 were situated bilaterally).

Hyperodontic molars were observed in 9 patients (about 7%) (7 in women, and 2 in men). 5 of these teeth were supplementary.

Next in frequency were hyperodontic bicuspid (4%), 3 in the upper jaw and 3 in the lower jaw.

All teeth, found in the lower jaw, were supplementary.

In the canine region 4 hyperodontic teeth (supplementary) were observed. The main part of the teeth had a palatal position (78%). About 20 % were

Table IV
Positional variations of impacted hyperodontic teeth

A-position	No. of teeth	B-position	No. of teeth
Buccal	3 (1)*	Over the apex (deep)	13 (1)*
In the dental arch	30 (12)*	Between the apex and the cervix	107 (16)*
Palatal	96 (7)*	Above the cervix (superficial)	9 (3)*
Total	129 (20)*	Total	129 (20)*

()* supplementary teeth

found within the dental arches and the rest (12%) in buccal position. With regard to the retention level one could establish, that most of the teeth (about 80%) were observed in a position between the apex and the cervix of the control tooth. The deep and superficial impacted hyperodontic teeth were found in 10 % and 8 % respectively (See Table III and IV).

DISCUSSION

This investigation was performed on patients referred for surgical removal of impacted hyperodontic teeth. Thus the material may be regarded as selected, it is at the same time, however, representative for oral surgery in general.

The authors found in agreement with the observations reported by *Thoma* (1954) and *Lind* (1959), that the main part of the hyperodontic teeth were situated in the incisive region of the upper jaw, in a palatal position and on a retention level between the apex and the cervix of the erupted neighbouring tooth. This anomaly was found more frequently in men than in women.

The distribution of the hyperodontic teeth between the right and the left incisive region of the jaw was approximately the same in women, while the left side was dominating in men.

The supplementary form was most frequent in this region.

The bicuspid and molar regions had comparatively few hyperodontic teeth and almost an even distribution of supplementary and supernumerary teeth. The frequency was twice as high in women than in men. Hyperodontia in the canine region is very rare according to *Staphne* (1932) and *Joshi* (1966). However, in the present material four such teeth were found (one supplementary and three supernumerary; two in the upper jaw and two in the lower jaw).

SUMMARY

The material consisted of 100 patients (with 129 hyperodontic teeth) referred for surgical removal in 1960—1966.

In 90 % of the material impacted hyperodontic teeth were observed in the incisive region of the upper jaw. They were mostly situated in a palatal position and on a retention level between the apex and the cervix of the erupted neighbouring tooth. Only 20 teeth had a supplementary form.

RÉSUMÉ

VARIATIONS DE POSITION DES DENTS SURNUMÉRAIRES INCLUSES
ETUDE CLINIQUE ET RADIOGRAPHIQUE

Le matériel se composait de 100 patients (ayant 129 dents surnuméraires) adressés pour ablation chirurgicale en 1960—1966.

Dans 90 % des cas, les dents surnuméraires observées se trouvaient dans la région incisive de la mâchoire supérieure. La plupart étaient placées du côté palatin et étaient incluses à un niveau situé entre l'apex et le collet des dents voisines présentes sur l'arcade. Vingt de ces dents seulement avaient la forme de dents supplémentaires.

ZUSAMMENFASSUNG

VARIATIONEN IN DER TOPOGRAPHIE IMPAKTIERTER ÜBERZÄHLIGER ZÄHNE.
EINE KLINISCHE UND RADIOLOGISCHE STUDIE

Die Verfasser präsentieren ein Krankengut von 100 Patienten (mit zusammen 129 überzähligen Zähnen), die zum Zwecke der chirurgischen Entfernung dieser Zähne in den Jahren 1960—1966 überwiesen worden waren.

In 90 % der Fälle wurden impaktierte überzählige Zähne in der Frontzahnregion des Oberkiefers beobachtet. Sie befanden sich meist in palatinaler Position und in einer Retentionslage zwischen Apex und Zahnhals des vollständig durchgebrochenen Nachbarzahnes. 20 Zähne in diesem Untersuchungsmaterial hatten Supplementärformen.

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