



Study on Genial Tubercles – Number and the Ratio between Merged and Non – Merged.

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Abstract

Aim-The aim of the article is to carryout a study on number of genial tubercles present on the skulls.

Background- A mental spine is a small projection of bone on the posterior aspect of the mandible in the midline. There are usually four mental spines: two superior and two inferior. Collectively they are also known as the Genial Tubercles. The inferior mental spines are the points of origin of the Geniohyoid muscle, one of the Suprahyoid muscles and the superior mental spines are the origin of the Genioglossus muscle. Some of the tubercles are merged while some are not. It is stimulated that there is a slight difference between the count of genial tubercles of male skulls and female skulls.

Reason- The reason of this study is to find out average number of genial tubercles present on dry mandibles and calculate the ratio between merged and non-merged tubercles.

INTRODUCTION

The genial tubercles are a group of four bony extensions that surround the lingual foramen bilaterally on the lingual surface of the mandible, situated midway between the superior and inferior borders of the mandible. These tubercles are four in number with 2 superior and 2 inferior tubercles. (4,5)

Also they may be merged with each other or free.

Attachments - They serve as the insertion for the Geniohyoid muscles (lower genial tubercles) and Genioglossus muscles (upper genial tubercles). (1,6)

Importance - The action of these muscles is related to lingual mobility and deglutition, being important for two vital functions of capital importance: speech and feeding. Hypertrophy of the genial tubercles is common especially in atrophied mandibles.

Fractures - The genial tubercles may become (relatively) enlarged and prominent owing to a combination of calcification in the tendinous insertion of the Geniohyoid and Genioglossus muscles and atrophy of the mandible. (3)

The genial tubercles are affected in many mandibular fractures of the symphysis region, although the majority of cases described in the literature refer to spontaneous fractures in atrophic edentulous mandibles. The treatment is controversial, with the majority of authors arguing for a conservative treatment without the excision of the fractured tubercles from the floor of the mouth or without replacement of the fractured tubercles and of the muscles inserted in them. This clinical report describes a situation of difficult diagnosis of this unusual pathology and reviews other documented cases. (2)

METHOD

60 unsexed dry mandibles were taken and number of superior and inferior Genial Tubercles were counted and noted down.

Also it was noted whether the tubercles were merged with each other or free.

All the data were represented in a tabular form with count of superior tubercles, inferior tubercles, and merged and non-merged ones.

SNO.	Inferior tubercles	Superior tubercles	Total number of Tubercles	Merged or Non - merged
1	2	2	4	
2	1	2	3	
3	1	2	3	
4	1	2	3	
5	2	2	4	Merged
6	1	2	3	
7	2	2	4	
8	1	2	3	
9	2	2	4	merged
10	1	2	3	
11	1	2	3	
12	2	2	4	
13	1	2	3	
14	2	2	4	
15	2	2	4	merged
16	2	2	4	
17	2	2	4	merged
18	2	2	4	
19	2	2	4	merged
20	2	2	4	
21	1	2	3	
22	2	2	4	merged
23	1	2	3	
24	2	2	4	merged
25	0	2	2	
26	2	2	4	merged
27	1	2	3	
28	2	2	4	
29	1	2	3	
30	2	2	4	merged
31	0	2	2	
32	2	2	4	merged
33	1	2	3	
34	1	2	3	
35	0	2	2	
36	1	2	3	
37	0	2	2	
38	2	2	4	merged
39	0	2	2	
40	2	2	4	merged
41	2	2	4	merged
42	2	2	4	
43	0	2	2	
44	2	2	4	merged
45	2	2	4	merged
46	2	2	4	

SNO.	Inferior tubercles	Superior tubercles	Total number of Tubercles	Merged or Non - merged
47	2	2	4	merged
48	0	2	2	
49	2	2	4	
50	2	2	4	
51	2	2	4	merged
52	2	2	4	merged
53	1	2	3	
54	1	2	3	
55	1	2	3	
56	2	2	4	merged
57	2	2	4	merged
58	0	2	2	
59	2	2	4	merged
60	2	2	4	

RESULT

The study conducted showed the following result.

Number of genial tubercles	Number of mandibles
4	34
3	18
2	8

Characterstics	Number of mandibles
merged	21
Non merged	39

DISCUSSION

It is found that number of genial tubercles vary from person to person with number of superior tubercles constant. Inferior tubercles maybe 1 or 2 or maybe completely absent in some mandibles. Also these Genial tubercles are either free or merged with one another irrespective of any trait. Various studies and research has been done on its clinical and diagnostic significance, fractures and enlargement but this type of study is first of its kind and has not been done before. Not much information about it is even available on websites.

CONCLUSION

Number of superior tubercles is usually constant and inferior tubercles vary. The ratio between merged and non- merged tubercles is 1:2.

REFERENCES

1. Genial tubercle." The American Heritage Stedman's Medical Dictionary. Houghton Mifflin Company, 2002. <http://www.answers.com/topic/mental-spine> Accessed: 22 Oct. 2007.
2. "Genial tubercle." Mosby's Dental Dictionary. Elsevier, Inc., 2004. <http://www.answers.com/topic/mental-spine> Accessed: 22 Oct. 2007.
3. Spontaneous fracture of the mandibular genial tubercles. A case report, Gallego L et al. 2007 Dec 1;12(8):E599-601
4. Goebel WM. Fractured genial tubercles. J Prosthet Dent. 1978;39(6):603-04.
5. Reifman S. Genial tubercle fracture. Report of a case. Oral Surg Oral Med Oral Pathol. 1969;27(5):595-97.
6. Shohat I, Shohani Y, Taicher S. Fracture of the genial tubercles associated with mandibular denture: A clinical report. J Prosthet Dent. 2003;89(3):232-33.