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| RESEARCH ARTICLE

Prevalence and Risk Factors of Fibroma among General Hospitals in Iraq

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| ABSTRACT

Benign tumours made of fibrous or connective tissue are called fibromas. Malignant tumours are referred to as fibrosarcomas. A clinical entity that can develop in the oral cavity is an oral fibroma. The objective of this research was to ascertain the fibroma prevalence and risk factors in Iraqi general hospitals from 2018 to 2023. In this survey, a prospective cross-sectional research was conducted. Randomly selected genders who were at least 15 years old were chosen using a systematic sampling technique. The study included a standardised self-administered questionnaire to gather personal and historical data from the participants. Out of 106 patients comprised, 55 (51.90%) of females and 51 (48.10%) of males, with a mean age of (43.59 ± 18.36) years old. However, fibroma was statistically associated with topography at (P-Value=0.004). The prevalence of fibroma diagnosed among general hospitals aged 15 to 98 years old. Fibromas often form in adults between the ages of 40 and 60. A variety of factors, such as trauma or localised irritation on the tongue, lip, gums, or inside of the cheeks, might contribute to their development.

| KEYWORDS

Fibrosarcma, benign tumors, fibroma, oral fibroma, trauma, tongue.

| ARTICLE INFORMATION

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1. Introduction

Fibrosarcomas are regarded as malignant tumors structured of fibroblasts, which can have different quantities of collagen production and a "herringbone" architecture (Kaur, 2022). It is a malignant fibroblast mesenchymal tumour that can metastasize and infrequently affects the mouth cavity (Hu, 2023). Generally, oral fibroma is a clinical entity that may be generated in the oral cavity (Masannan, 2023), introduced as a lesion that, although commonly benign, needs attention and assessment by dental specialists (Soukup, 2019). Moreover, it is a clinical entity that appears on the gingiva (Bawazir, 2021) and is supposed to be derived from the connective tissue of the submucosa or periodontal ligament (Shrestha, 2021). It can appear at any age, though young-aged groups are the most affected (Romdlon, 2023). Females more commonly impacted males, the gingiva anterior to the permanent molars (Vázquez, 2023). Fibroma is introduced clinically as either a pedunculated or a sessile mass, in which connective tissue color with surrounding ulceration at the same color can be observed (Bernardo, 2024).

Clinically described as a slow-growing, well-demarcated growth (Collins, 2023), gingiva fibromas usually have a smooth, sessile, or pedunculated mass, a hard consistency, and a normal-colored mucosa. They can also cause trouble speaking and eating (Natarajan, 2023).

It is currently unclear whether risk factors lead to tumorigenesis (Souchelnytskyi, 2023). However, a number of things, such as trauma or localised irritation on the tongue, lip, gums, or inside of the cheeks, might contribute to its development (Contreras, 2023).

Nevertheless, nothing is now known about the triggers of the fibroma, despite earlier research showing that hormone fluctuations, stress, inadequate dental hygiene (Lomeli, 2023), ill-fitting dentures, and dental prostheses are significant risk factors for developing oral fibroma (Dalirsani, 2023).

Since no clinical symptoms were found in the early stages of growth, the precise moment of fibroma initiation is typically unknown (Herget, 2016).

2. Material and Methods Study

2.1 Design and Population:

The University of Karbala's Department of Oral and Maxillo-Facial Pathology approved this prospective cross-sectional study. From 2018 to 2023, 106 individuals received diagnoses from various Iraqi government hospitals. Using systematic selection approaches, participants with fibromas who were at least 15 years old at the time of registration were randomly selected. Variables like demographic gender, age, governorates, and topography with menstrual period schedules were found utilizing an organized self-administered questionnaire (SSAQ) and interview. All the data was translated into a computerized file structure. The file structure was tested for errors utilizing mean and rational data via cleaning ways, and inconsistencies were fixed.

2.2 Sample Size Computation:

The statistical analyses used to calculate the sample size were performed with Microsoft Excel 2019 and the Statistical Package for Social Sciences (SPSS) version 27. In total, 106 patients were found to have been treated between 2018 and 2023. The patient information was used to manually collect the data. The power used to calculate the sample size was 0.90, and the α error was 0.05. Frequency spread and percentages for selected variables describing the detailed cases with samples were done. All the tests were normally distributed, such as variables introduced by mean, standard deviation (SD), and standard error mean.

3. Results:

The histological features and clinical prevalence of the fibroma were observed and analyzed in 106 patients from 2018 to 2023 in Iraqi hospitals.

3.1 Data analysis categorization by gender:

Of the 106 patients in total, 55 (51.90%) were female and 51 (48.10%) were male. The patients' mean age was 43.59 ± 18.36 years. The female-to-male ratio is 1.08 to 1. Table 1 indicates that there was no significant difference in gender (P-Value=0.146).

Table 1: Gender distribution.

		Frequency	Percent	Valid Percent	Cumulative Percent	P-Value
Valid	Male	51	48.1	48.1	48.1	0.146
	Female	55	51.9	51.9	100.0	
	Total	106	100.0	100.0		

The standard error mean of age according to gender is shown in Figure 1.

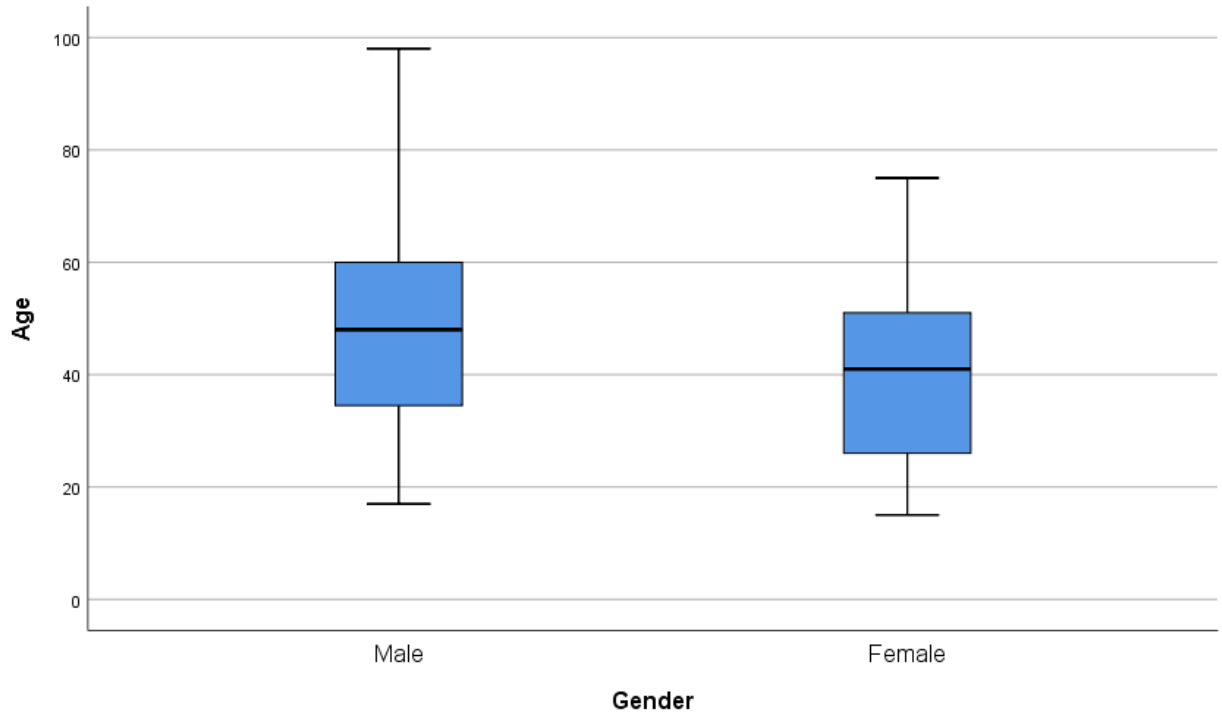

Figure 1: The standard error mean of age according to gender.

From Figure 1, it can be clearly observed that the standard error mean of age of males is more stable than that of females.

3.2 Data analysis categorization by age group:

Four age categories can be identified from the total of 106 patients: >25, (25-39), (40-59), and 60+. Table 2 presents that there was no significant difference (P-Value=0.372) across the four age groups.

Table 2: Age group distribution.

		Frequency	Percent	Valid Percent	Cumulative Percent	P-Value
Valid	>25	20	18.9	18.9	18.9	0.372
	(25-39)	25	23.6	23.6	42.5	
	(40-59)	34	32.1	32.1	74.5	
	60+	27	25.5	25.5	100.0	
	Total	106	100.0	100.0		

From Table 2, it can be obviously observed that the maximum value (34) is (32.10%) of the age group (40-59), and the minimum value (20) is (18.90%) of the age group >25. The standard error mean of the age group (25-39) is more stable than that of other age groups, as shown in Figure 2.

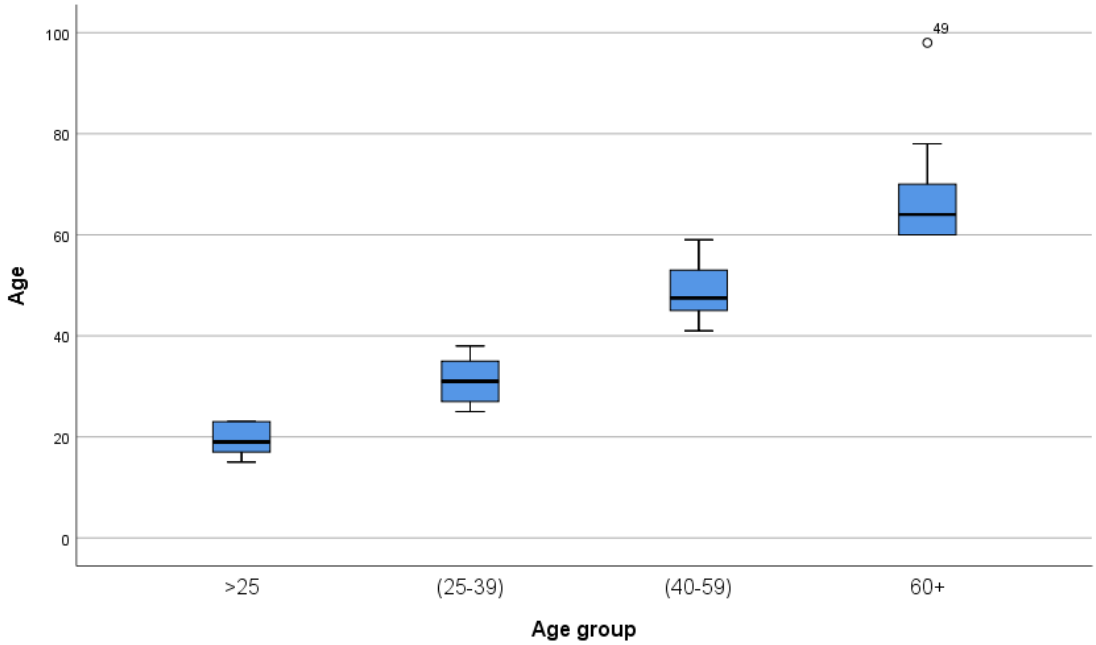

Figure 2: The standard error mean of age according to age group.

3.3 Data analysis categorization by governorates:

106 patients were collected as fibroma tumors that were recorded in (6) Iraqi governorates from 2018 to 2023 comprising: Baghdad (93) with (87.70%), Basrah (5) with (4.70%), Al-Muthanna (3) with (2.80%), Al-Diwanyia (2) with (1.90%), Nasiriyah (2) with (1.90%) and Kut (1) with (0.90%), as shown in Figure 3. Fibroma was focused on Baghdad governorate (93) with a percentage (87.70%).

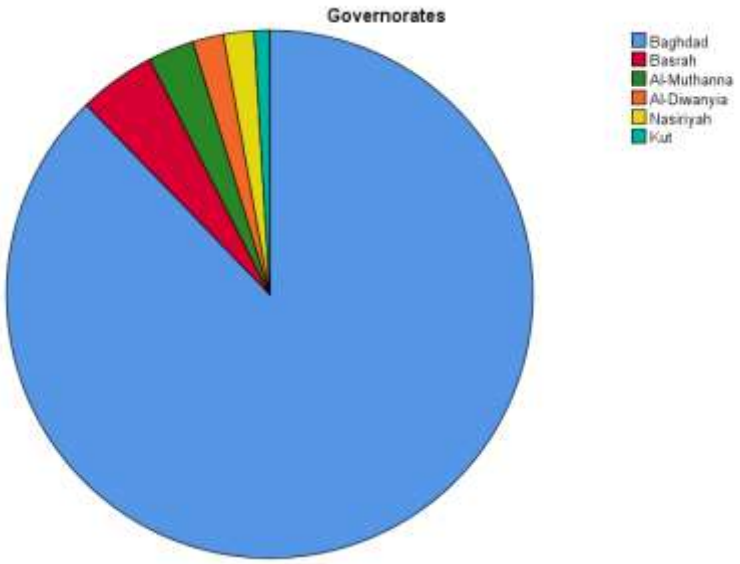

Figure 3: Pie charts of governorates.

The site fibroma tumors comprised the border of the tongue (31) cases, followed by the tip of the tongue (26) cases, dorsal surface (21) cases, and ventral surface (12) cases, as displayed in Table 3. It can be observed that the maximum value (31) cases with a percentage (29.20%) were recorded on the border of the tongue, and the minimum value (2) cases with a percentage (1.90%) on the lateral surface. All topography showed extremely significant variations in relation to (P-Value=0.004) Table 3. The Frequency distribution of fibroma tumors by topography.

	Topography	Frequency	Percent	Valid Percent	Cumulative Percent	P-Value
Valid	Border of tongue	31	29.2	29.2	29.2	0.004
	Tip of Tongue	26	24.5	24.5	53.8	
	Dorsal surface	21	19.8	19.8	73.6	
	Ventral surface	12	11.3	11.3	84.9	
	Tongue	6	5.7	5.7	90.6	
	Right side	5	4.7	4.7	95.3	
	Left side	3	2.8	2.8	98.1	
	Lateral surface	2	1.9	1.9	100.0	
	Total	106	100.0	100.0		

For the relative frequency of fibroma tumors with respect to gender, it can be obviously shown that females (17) are more affected than males (15) on the border of the tongue site. The maximum frequent (31) cases appeared on the border of the tongue. The minimum frequent (2) cases appeared on the lateral surface, as displayed in Table 4.

Table 4. The relative frequency of fibroma tumors with respect to gender.

		Gender		
	Topography	Male	Female	Total
Valid	Border of tongue	14	17	31
	Tip of Tongue	15	11	26
	Dorsal surface	11	10	21
	Ventral surface	3	9	12
	Tongue	2	4	6
	Right side	2	3	5
	Left side	2	1	3
	Lateral surface	2	0	2
Total		51	55	106

4. Discussions

A fibroma is a benign tumor or growth containing fibrous, connective tissue in the oral cavity (Błochowiak, 2019). This study is a report on the prevalence of clinical features of 106 patients who were diagnosed with fibroma over a 15-year period from 2018 to 2023.

Most occurrences of fibro are reactive localised fibrous hyperplasia, which can be caused by a variety of reasons, including trauma or local irritation (Alaggio, 2021). An interesting finding is that the fibroma is a connective tissue-based tumour that, when viewed under a microscope, mimics inflammatory hyperplasia (Alaggio, 2021). One intriguing observation is that the fibroma is a connective tissue-based tumour that resembles inflammatory hyperplasia in microscopy (Azam, 2019). A stimulating issue to be observed is that the fibroma is a tumor on a connective tissue basis and microscopically like inflammatory hyperplasia (Azam, 2019).

This study introduced the demographic and clinicopathological analysis of (106) patients with fibroma tumors diagnosed at different Iraqi governorates hospitals, and the results are in complete agreement with data recorded in studies (Baviskar, 2023).

From the results, the most public topography incidence of fibroma tumors is the border of the tongue, which was accepted by study (Ali,2013) as well as the impacted females, with peak appearance occurring between twenty-five to thirty-nine of human life (Adebayo, 2005). Moreover, all fibroma tumors occur in the mouth. Several studies showed that females are more likely to grow fibroma tumors than males (Takagi, 2024). It is difficult to determine a clinical diagnosis of fibroma tumors, and subsequently, these cell tumors do not have clear clinical features (MacDonald, 2015). The patient age group ranged from fifteen to eighty-nine, with a mean of 43.59 years (Ahmed, 2022).

5. Conclusion

The majority of the time, fibroma is a benign, self-limiting illness that is detected through clinical and pathological examination. The majority of cases have a history of trauma or slow-developing. The majority of the time, fibroma is a benign, self-limiting illness that is detected through clinical and pathological examination. The majority of cases have a history of trauma or slow-developing

localised irritation on the tongue, lip, gums, or inside of the cheeks, and localised irritation on the tongue, lip, gums, or inside of the cheeks. For gender patients, a slight female preponderance that was displayed a female to male ratio of (1.08:1). Eight main topography sites of fibroma, the most public topography occurrence of fibroma tumors is the border of the tongue with impact for both genders, and there was a highly significant difference among all topography, with peak incidence occurring in age group (25-39).

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