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RESEARCH ARTICLE

AWARENESS OF DENTAL STUDENT ABOUT FACIAL PARALYSIS FOLLOWING INFERIOR ALVEOLAR NERVE BLOCK IN KSA.

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Abstract

Introduction:-

Administration of local anesthesia is a routine procedure of daily practice in dentistry.

The attainment of adequate analgesia in the operating field is necessary in order to achieve a fully cooperation with the patient and complete the treatment successfully[1]. However when administering regional anesthesia, performing per apical and dental implant surgeries, or implementing endodontic treatments in the mandible, it is important to anatomical variation and anatomical landmark to localize IAN and prevent injuries[2].

One of the most local analgesia complications of an inferior alveolar nerve block anesthesia is Facial nerve palsy. Facial nerve CN (VII) is the seventh paired cranial nerve derivatives of the second pharyngeal arch. Facial nerve anatomical is very complex there are many branches, which transmit a compilation of sensory, motor and parasympathetic fiber [2].

Facial nerve palsy defines as a loss of facial muscles control due to injury or inflammation of facial nerve and it can be unilateral or bilateral. After injury occurrence to the facial nerve by any reason the facial muscles showing weakness or drooping. Accurately localizing inferior alveolar nerve is important when administering local anesthesia and performing dental treatment therefore, knowing the normal range of the possible locations is essential.

Aim

Our purpose of this study was to find out the knowledge of dental student toward the facial nerve paralysis after inferior alveolar nerve anesthesia in Saudi Arabia.

Materials and Method:-

This study was carried out in king Saudi Arabia, Faculty of Dentistry. Necessary approval from authorities was taken. A well-designed questionnaire was used to collect data from 250 dental student .130 they were males and 120 were females. Total responses from all dental students. Design the questionnaire survey using Google Forms, in addition to the tables that have been organized and analyzed. "Responses to our questions are organized automatically and systematically into forms, with real-time response plans and information, and better utilizing our data by looking at spreadsheets .The questionnaire involved the age, sex and address of student and many questions related to facial nerve paralysis diagnosis, clinical features, and management..

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Statistical methods:-

After data were extracted, were revised, coded and fed to statistical software IBM SPSS version 22. All statistical analysis was done using two tailed tests and alpha error of 0.05. P value less than or equal to 0.05 considered to be statistically significant. Descriptive analysis based on frequency and percent distribution was done for all categorical data (frequency tables). As for awareness, each correct answer given score of 1 point, otherwise zero score was given for the participant. All discrete awareness items scores were summed and then categorized into poor for those who had score less than 50% of the maximum score, moderate for those who had score ranged between 50% to less than 75% and others who had score exceeding 75% was considered of good awareness level. Univariant relations between the sample bio demographic characteristics and their awareness level were tested using Pearson chi square test.

Results:-

A total number of 250 questionnaires were sent to various departments of dental college in KSA. Among the 250 dental students, 130 samples 52% were male and 120 samples 48% were female. Most of samples age range from (20 to 26) years.

The results obtained were shown in Table 1.

Table (1): personal data of sampled dental students, Saudi Arabia

Personal data	No	%
Age in years		
20-	60	24.0%
23-	150	60.0%
25+	40	16.0%
Gender		
Male	130	52.0%
Female	120	48.0%

Awareness of dental students regarding facial palsy diagnosis methods, Saudi Arabia

The results obtained were shown in Table 2.

Which type of facial paralysis is more common	Immediate type	155	62.0%
	Delayed type	95	38.0%
Maximum recovery duration of immediate type of facial paralysis is	1 hour	37	14.8%
	2 hours	97	38.8%
	3 hours	57	22.8%
	4 hours	59	23.6%
Delayed type of facial paralysis start	After 1h	44	17.6%
	Several hours to several days	141	56.4%
	After 2 weeks	41	16.4%
	After 1 month	24	9.6%
Which of this is not branch of facial nerve	Zygomatic nerve	57	22.8%
	Temporal nerve	84	33.6%
	Maxillary nerve	68	27.2%
	Mandibular nerve	41	16.4%
Which technical mistake during IANB can result in facial paralysis	Inject too posterior	135	54.0%
	Inject too superior	62	24.8%
	Inject too inferior	30	12.0%
	Short injection	23	9.2%
All of this can cause facial paralysis after IANB except	Direct trauma to inferior alveolar nerve by a needle	68	27.2%
	Hematoma formation	77	30.8%
	Toxic damage due to local anesthetics	46	18.4%
	Intra parotid injection	59	23.6%
Which of the following local anesthesia contents agent has greater chance to cause facial paralysis	Lidocaine	68	27.2%
	Bupivacaine	77	30.8%
	Mepivacaine	51	20.4%
	Procaine	54	21.6%
Facial paralysis considers as complication of Vazirani-Akinosi nerve block	No	55	22.0%
	Yes	129	51.6%
	Don't know	66	26.4%
Deviation of normal anatomy may cause facial paralysis	No	60	24.0%
	Yes	134	53.6%
	Don't know	56	22.4%
Internal carotid artery has related to delayed facial palsy	No	57	22.8%
	Yes	85	34.0%
	Don't know	108	43.2%
Delayed type recover during months	No	55	22.0%
	Yes	114	45.6%
	Don't know	81	32.4%

Table 3:-Dental students' awareness regarding facial palsy management methods, Saudi Arabia.

Facial palsy management items		No	%
What is the main drug for facial paralysis patient	Steroid	146	58.4%
	Amoxicillin	22	8.8%
	Ibuprofen	34	13.6%
	Nitrous oxide	48	19.2%
What is the 1st step in management of facial paralysis after IANB	Re anesthetizing	17	6.8%
	Give him antibiotic	19	7.6%
	Reassure patient	159	63.6%
	o Stop treatment and give him another appointment	55	22.0%
Is it contraindicated to the doctor to re anesthetizing patient to achieve mandible block	No	75	30.0%
	Yes	115	46.0%
	Don't know	60	24.0%
Artificial tears should be used with facial paralysis patient	No	50	20.0%
	Yes	128	51.2%
	Don't know	72	28.8%
Lubrication of the eye is used to management facial paralysis patient	No	49	19.6%
	Yes	142	56.8%
	Don't know	59	23.6%
Contact lens should be removed from patient eye after facial paralysis occurs	No	37	14.8%
	Yes	149	59.6%
	Don't know	64	25.6%
Shouldn't use sunglasses with facial paralysis patient	No	100	40.0%
	Yes	57	22.8%
	Don't know	93	37.2%

Table 4:-Dental students' awareness regarding facial palsy clinical features, Saudi Arabia.

Facial palsy clinical features	No		Yes		Don't know	
	No	%	No	%	No	%
Swelling of affected side	105	42.0%	87	34.8%	58	23.2%
Inability to close the eyelids	36	14.4%	173	69.2%	41	16.4%
Drooping of the corner of the mouth	40	16.0%	168	67.2%	42	16.8%
Deviation of the mouth toward the affected side	59	23.6%	154	61.6%	37	14.8%
Trismus	63	25.2%	144	57.6%	43	17.2%
Generalized weakness of affected side	58	23.2%	156	62.4%	36	14.4%
Tearing of affected side	92	36.8%	109	43.6%	49	19.6%

Figure 1:-Awareness level of dental students regarding facial palsy following Inferior Alveolar Nerve Block in KSA.

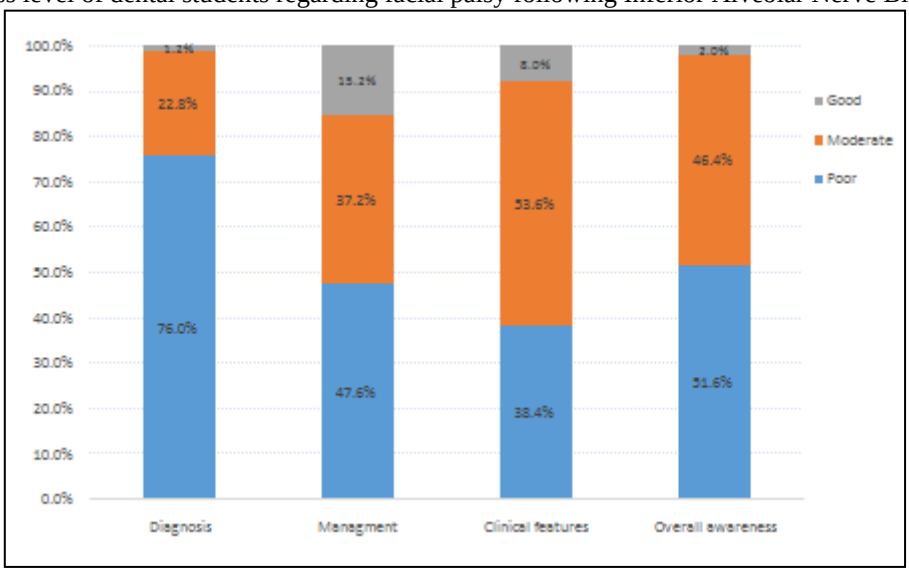

Table 5:-Awareness level of dental students regarding facial palsy following Inferior Alveolar Nerve Block in KSA by their age.

Awareness domain		Age in years						P
		20-		23-		25+		
		No	%	No	%	No	%	
Diagnosis	Poor	49	81.7%	108	72.0%	33	82.5%	.265
	Moderate	10	16.7%	41	27.3%	6	15.0%	
	Good	1	1.7%	1	.7%	1	2.5%	
Management	Poor	32	53.3%	71	47.3%	16	40.0%	.346
	Moderate	23	38.3%	52	34.7%	18	45.0%	
	Good	5	8.3%	27	18.0%	6	15.0%	
Clinical features	Poor	34	56.7%	50	33.3%	12	30.0%	.013*
	Moderate	23	38.3%	85	56.7%	26	65.0%	
	Good	3	5.0%	15	10.0%	2	5.0%	
Overall	Poor	41	68.3%	71	47.3%	17	42.5%	.049*
	Moderate	18	30.0%	76	50.7%	22	55.0%	
	Good	1	1.7%	3	2.0%	1	2.5%	

P: Pearson X^2 test

* P < 0.05 (significant)

Table 6:-Awareness level of dental students regarding facial palsy following Inferior Alveolar Nerve Block in KSA by their gender.

Awareness domain		Gender				P
		Male		Female		
		No	%	No	%	
Diagnosis	Poor	92	70.8%	98	81.7%	.049*
	Moderate	35	26.9%	22	18.3%	
	Good	3	2.3%	0	0.0%	
Management	Poor	59	45.4%	60	50.0%	.293
	Moderate	54	41.5%	39	32.5%	
	Good	17	13.1%	21	17.5%	
Clinical features	Poor	48	36.9%	48	40.0%	.456
	Moderate	69	53.1%	65	54.2%	
	Good	13	10.0%	7	5.8%	
Overall	Poor	65	50.0%	64	53.3%	.092
	Moderate	60	46.2%	56	46.7%	
	Good	5	3.8%	0	0.0%	

P: Pearson X^2 test

* P < 0.05 (significant)

Discussion:-

Lack of success in obtaining complete anesthesia in dentistry may be related to anatomical, physiological or psychological factors. Anatomical variations at the site of the injection, infection or inflammation at the injection site and medical or psychological problems with which the patient may present, can affect the anesthetic outcome (patient related factors).

This study was designed to compare knowledge of dental student with other various levels toward the facial nerve paralysis after inferior alveolar nerve anesthesia and reassure the patient if it occur also to teach the students anew technique to avoid the FNP.

It was noticed that there was a significant lack of knowledge among undergraduate students and dental interns toward the facial nerve paralysis after inferior alveolar nerve anesthesia.

Conclusion:-

In dental practice, it should be considered that iatrogenic factors may play a direct or indirect role in FNP. The participants were generally unaware of most of the complications occurred after local anesthesia.

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