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A study on dentists' responses to a VCD on dental consultation cases

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Background/problem : *From years of experience in oral-surgery, the researcher had collected many dental consultation cases. They were cases of patients who got a swelling of facial and oral region with different sources of infections. They were collected on a VCD, which is easy to demonstrate and to learn. Some cases were rare and not commonly found in normal practices.*

Objective : *To search and to test a new method of presentation such as VCD presentation of dental consultation cases, that was easy to demonstrate and to learn in most dentists' opinion.*

Design : *Descriptive study*

Setting : *Twenty departments of dentistry of research hospitals.*

Material : *The VCD consisted of eleven dental consultation cases that the researcher had concluded on the history of oro-facial swelling and its treatment planning. This was performed at the Department of Dentistry, King Chulalongkorn Memorial Hospital. The length of this VCD was twenty-four minutes and starting from the first step of treatment until the final which the patients were cured or some in their follow-up period. All cases were categorized into three groups according to their sources of infection, namely, the first group were patients no. 1-5 who got a swelling from odontogenic infection; the second group, patients no. 6-9 who got a swelling from odontogenic infection that involved cystic lesions; the last group, patients no. 10 -11 who got a swelling from other infections.*

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Method : *We gave fifty-seven copies of questionnaires, a paper of the VCD details, and also a VCD on dental consultation cases. These were given to dentists in twenty research hospitals which were distributed to the whole country plus a few private dentists. Each hospital received two or more copies of questionnaires according to the request and willingness of the dentists who answered the questionnaires. The duration of the research was from March 11, 2005 to May 12, 2005. Out of the fifty-seven copies of distributed questionnaires, thirty-six were answered and returned, a response rate of 63.16 %. The data from the research were finally analyzed.*

Result : *All baseline data, such as gender, age, position, occupational experience, duration of working per week showed no statistically significant difference of the information obtained from the VCD data such as its content and interest of the VCD, the details of the VCD, the guideline of treatment, the reason of agreement in treatment, the usefulness of VCD, the knowledge and understanding from VCD and the capable of treatment. However, there were two relations detected. One relation shows a statistically significant difference between the position of the dentist and those who had a reason of agreement (p-value = 0.032). The other relation is that there was a statistically significant difference between the age of the dentist and those who learned from the VCD (p-value = 0.045). Lastly, every dentist who answered the questionnaire showed his/her agreement of treatment with any reason (100%).*

Conclusion : *This study concluded that aging and specialty of the dentists were important for their practice. The dentists who were older than thirty years old had more knowledge and understanding of the issue than those who were younger. The specialty of the dentists were more advantageous to reason of agreement in the whole treatment than the dentists who were general practice. However this study was a pilot study to correct and improve for the further studying media.*

Keywords : *Dental consultation cases, Occupational experience, Odontogenic infection, Video compact disc.*

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พื้นฐาน/ปัญหา : *ด้วยประสบการณ์ด้านศัลยกรรมช่องปากที่ปฏิบัติมาหลายปี ผู้วิจัยได้รวบรวมผู้ป่วยที่มารับการปรึกษาด้านทันตกรรมจำนวนหลายราย ซึ่งเป็นผู้ป่วยที่บวมบริเวณใบหน้าและช่องปาก โดยมีสาเหตุการติดเชื้อในช่องปากที่แตกต่างกัน โดยรวบรวมในรูปแบบของ วีดิทัศน์ ซึ่งทำให้ง่ายต่อการสาธิตและต่อการเรียนรู้ ผู้ป่วยบางรายพบได้น้อยในคลินิกปกติ*

วัตถุประสงค์ : *เพื่อหาและทดสอบวิธีใหม่ในการนำเสนอ เช่น การนำเสนอโดยวีดิทัศน์เกี่ยวกับผู้ป่วยที่มารับการปรึกษาด้านทันตกรรมว่าทันตแพทย์ส่วนใหญ่มีความคิดเห็นว่าวีดิทัศน์นี้ง่ายต่อการสาธิตและต่อการเรียนรู้*

การออกแบบ : *การศึกษาวิจัยเชิงพรรณนา*

การศึกษา : *ฝ่ายทันตกรรม 20 แห่งของโรงพยาบาลที่เข้าร่วมศึกษา*

วัสดุ : *ผู้วิจัยได้รวบรวมและสรุปเกี่ยวกับประวัติของการบวมและการวางแผนการรักษา ซึ่งผู้ป่วยเหล่านี้ได้รับการรักษาที่ฝ่ายทันตกรรม โรงพยาบาล-จุฬาลงกรณ์ ความยาววีดิทัศน์ 24 นาที ประกอบด้วยผู้ป่วยที่มาปรึกษาด้านทันตกรรม 11 ราย และเนื้อหาตั้งแต่เริ่มต้นจนจบการรักษา คือผู้ป่วยได้รับการรักษา หรือผู้ป่วยบางรายคงอยู่ในระยะติดตามหลังการรักษา ผู้ป่วยทั้งหมดจะถูกจัดแบ่งเป็น 3 กลุ่มตามสาเหตุของการติดเชื้อที่แตกต่างกัน เช่น กลุ่มที่ 1 เป็นผู้ป่วยรายที่ 1-5 มีอาการบวมใบหน้าและกระดูกขากรรไกรบนหรือล่าง โดยมีสาเหตุจากฟัน กลุ่มที่ 2 เป็นผู้ป่วยรายที่ 6-9 มีอาการบวมใบหน้าและกระดูกขากรรไกรบนหรือล่าง โดยมีสาเหตุจากฟันและเกี่ยวข้องกับพยาธิสภาพที่มีถุงน้ำ และกลุ่มสุดท้ายเป็นผู้ป่วยรายที่ 10 – 11 มีอาการบวมบริเวณดังกล่าวจากสาเหตุอื่น ๆ*

วิธีการ : *ผู้วิจัยได้แจกแบบสอบถามจำนวน 57 ชุด รายละเอียดของวีดิทัศน์และรวมถึงแผ่นวีดิทัศน์ของผู้ป่วยที่มาปรึกษาทางด้านทันตกรรม โดยได้แจกให้กับทันตแพทย์ตามโรงพยาบาลที่เข้าร่วมศึกษา 20 แห่งซึ่งกระจายทั่วประเทศ รวมถึงทันตแพทย์เอกชน 2-3 ราย แต่ละโรงพยาบาลจะได้รับแบบสอบถามจำนวน 2 ชุดหรือมากกว่าขึ้นกับความต้องการและความเต็มใจของทันตแพทย์ผู้ตอบแบบสอบถาม ระยะเวลาการวิจัยตั้งแต่ 11 มี.ค. 2548 ถึง 12 พ.ค. 2548 แบบสอบถามที่ได้แจกไปจำนวน 57 ชุด ได้รับการตอบกลับ 36 ชุด คิดเป็นอัตราการตอบกลับ 63.16 % ท้ายสุดข้อมูลจากการวิจัยได้นำมาวิเคราะห์*

ผลการทดลอง : *ข้อมูลพื้นฐานทั้งหมด เช่น เพศ อายุ ตำแหน่ง ประสบการณ์ในอาชีพ ระยะเวลาทำงานต่อสัปดาห์ ไม่มีความแตกต่างอย่างมีนัยสำคัญกับข้อมูลที่ได้รับจากวีดิทัศน์ เช่น เนื้อหาและความน่าสนใจของ วีดิทัศน์ รายละเอียดของวิดีทัศน์ แนวทางการรักษา เหตุผลของความเห็นด้วยต่อการรักษา ประโยชน์ของวีดิทัศน์ ความรู้และความเข้าใจจากวีดิทัศน์ และความสามารถที่จะรักษาหลังชมวีดิทัศน์ อย่างไรก็ตามได้ตรวจพบความแตกต่างอย่างมีนัยสำคัญทางสถิติ ระหว่างตำแหน่งของทันตแพทย์ และทันตแพทย์ที่ให้เหตุผลของความเห็นด้วยต่อการรักษา (ค่า P =0.032) และความแตกต่างอย่างมีนัยสำคัญระหว่างอายุของทันตแพทย์กับทันตแพทย์ที่ได้รับความรู้และความเข้าใจจากวีดิทัศน์ (ค่า P = 0.045) ท้ายสุดทันตแพทย์ทุกคนที่ตอบแบบสอบถามแสดงความเห็นด้วยต่อการรักษาด้วยเหตุผลต่าง ๆ (100 %)*

สรุป : *จากการศึกษาสรุปได้ว่าอายุและความเฉพาะทางของทันตแพทย์เป็นสิ่งสำคัญต่อการปฏิบัติงานของทันตแพทย์ ทันตแพทย์ที่อายุเกิน 30 ปี จะมีความรู้ความเข้าใจในการรักษาผู้ป่วยมากกว่าทันตแพทย์ที่อายุน้อยกว่าหรือเทียบเท่ากับ 30 ปี ทันตแพทย์เฉพาะทางจะได้เปรียบเรื่องเหตุผลที่เห็นด้วยต่อการรักษาผู้ป่วยดีกว่าทันตแพทย์ทั่วไป อย่างไรก็ตามการศึกษานี้เป็นเพียงเบื้องต้นเพื่อแก้ไขปรับปรุงสำหรับสื่อเพื่อการเรียนรู้ต่อไป*

คำสำคัญ : *ผู้ป่วยที่มาปรึกษาทางด้านทันตกรรม, ประสบการณ์ในอาชีพ, การติดเชื้อจากฟัน, วีดิทัศน์*

Odontogenic infections are among the most common infections of the oral cavity. They can be caused by dental caries, deep restorations that approximate the pulp chamber, pulpitis, periapical abscess, periodontitis, periodontal abscess and pericoronitis. Odontogenic infections may develop into osteoperiostitis of the jaw, osteomyelitis and deep fascial space infections.[1] Clinical signs warranting prompt hospital referral include dysphagia, difficulty with or pain on moving the tongue, stridor trismus, elevation of the tongue and fever. Other investigations such as radiographic examinations, CT scans of the jaws and neck and blood investigations may be ordered if it is clinically indicated.[2] This paper was about a study on dentists' responses to a VCD on dental consultation cases, most of which were oro-facial infections from odontogenic origins; some cases were from other origins. The researcher had collected many dental consultation cases, performed at the Department of Dentistry, King Chulalongkorn Memorial Hospital. They were cases about patients who got swelling facial and oral region with different sources of infections. They were collected on VCD, which is easy to demonstrate and to learn. Some cases were rare and not commonly found in normal practices. This research was a descriptive study and setting at twenty departments of dentistry of research hospitals. The objectives were to search and to test a new method of presentation such as VCD on dental consultation cases, which is easy to demonstrate and to learn according to the responses of most dentists or their suggestions.

Material: The VCD recorded eleven dental consultation cases that the researcher had collected which were about history of oro-facial swelling and its treatment planning. The length of the VCD was twenty-four minutes from the first step of the treatment to the final which the patients were cured and some in their follow-up period. All cases were categorized into three groups based on the sources of the infection. The first group included patients who got a swelling from odontogenic infection such as patient no. 1 and 2, both were oro-facial and had upper and lower jaws swelling; patient no.3 was infected from the third molar impacted tooth with oro-cutaneous fistula; patient no.4 was infected from the third molar impacted tooth which ended as osteomyelitis; lastly, patient no.5 was a hemophiliac(A); he was infected from the Lt. upper 1st molar with gum swelling and tooth loosening. The second group included patients who got a swelling from odontogenic infection involving cystic lesion such as patient no.6 who had a swelling from embedded tooth with dentigerous cyst; patient no.7 had a swelling from odontogenic cyst; lastly, patients no.8 and 9 had a swelling from radicular cysts with odontogenic infections. The third group contained patients who got a swelling from the other origins such as patient no.10 who had a swelling from squamous cell carcinoma which extensive destructed alveolar bone; finally, patient no. 11 was a complicated case of oro-nasal infection with an abnormal congenital tract that was not closed; hence, he had an operation for closure. The last two cases were in their follow-up period.

Method: The researcher gave fifty-seven copies of questionnaires, the paper of VCD details and also the VCDs on dental consultation cases. The details of the questionnaires about baseline data such as gender,

age, position, occupational experience, duration of working per week and the information obtained from the VCD data such as VCD content and interesting, VCD details, guideline for treatment, agreement with treatment, reason for agreement, usefulness of VCD, knowledge and understanding from VCD, capable of treatment and suggestion also. Its details were corresponded to objective which was easy to demonstrate and to learn in most dentist's opinion. The scale level of each answer were poor, fair, good and excellent. The researcher gathered the scale levels which were nearly the same meaning together such as poor and fair, good and excellent which were gathered in the same group. According to inadequate sample, the statistical analysis could be performed by this method so that the results were shown in all tables. In otherwise the question about agreement with the treatment, the scale levels of this answer were agree, disagree, not sure or etc. The following question about the reason for agreement which had the scale levels of practice in the right way, good technic, co-operation with other fields or all of above.

These were given to dentists in twenty research hospitals which were distributed to the whole country and a few private dentists. Each hospital received two or more copies of questionnaires according to the request and willingness of the dentist who answered the questionnaires. The duration of

Table 1. Baseline data related to the content and interesting of VCD and the VCD details.

	Content and interesting of VCD			VCD details		
	Fair	Good	P-Value	Fair	Good	P - Value
	N %	N %		N %	N %	
Gender						
Female	7 (53.8 %)	15 (65.2 %)	.752[a]	15 (68.2 %)	7 (50.0 %)	.459[a]
Male	6 (46.2 %)	8 (34.8 %)		7 (31.8 %)	7 (50.0 %)	
Age						
20 -30 yrs	5 (38.5 %)	7 (30.4 %)	.720[b]	7 (31.8 %)	5 (35.7 %)	1.000[b]
> 30 yrs	8 (61.5 %)	16 (69.6 %)		15 (68.2 %)	9 (64.3 %)	
Position						
General practice	8 (61.5 %)	15 (65.2 %)	1.000[b]	16 (72.7 %)	7 (50.0 %)	.304[a]
Specialist	5 (38.5 %)	8 (34.8 %)		6 (27.3 %)	7 (50.0 %)	
Occupational experience						
< = 10 yrs	8 (61.5 %)	15 (65.2 %)	1.000[b]	14 (63.6 %)	9 (64.3 %)	1.000[b]
> 10 yrs	5 (38.5 %)	8 (34.8 %)		8 (36.4 %)	5 (35.7 %)	
Work (hrs /wk)						
< = 30	6 (46.2 %)	8 (34.8 %)	.752[a]	9 (40.9 %)	5 (35.7 %)	1.000[b]
> 30	7 (53.8 %)	15 (65.2 %)		13 (59.1 %)	9 (64.3 %)	

From a = Continuity Correction test at $P < 0.05$

b = Fisher's Exact test at $P < 0.05$

the research was from March 11, 2005 to May 12, 2005. Out of fifty-seven copies of distributed questionnaires, thirty-six were answered and returned, a response rate of 63.16 %. The data from the research were finally analyzed.

Results

Table 1 shows a Continuity Correction test and Fisher's Exact test at P < 0.05; no statistically significant difference of the baseline data such as gender, age, position, occupational experience, and the duration of work per week related to the content, and interesting of the VCD and the details of the VCD.

Table 2 shows a Fisher's Exact test and Pearson Chi-Square test at P < 0.05; no statistically significant difference of the baseline data, as mentioned above, related to the guideline of treatment and the reason of agreement except one, which was statistically significant difference of a dentist's position related to the reason of agreement (p-value = 0.032). It is illustrated that the specialty of a dentist was important to the reason of agreement, as shown in the bar chart (Figure 1).

Table 2. Baseline data related to the guideline for treatment and the reason of agreement.

	Guideline for treatment			Reason of agreement			
	Fair	Good	P - Value	Practice in the right way	Co-operation	All of above	P -Value
	N (%)	N (%)		N (%)	N (%)	N (%)	
Gender							
Female	7 (63.6 %)	15 (60.0 %)	1.000 b	5 (62.5 %)	9 (90.0 %)	8 (44.4 %)	.060 c
Male	4 (36.4 %)	10 (40.0 %)		31 (37.5 %)	1 (10.0 %)	10 (55.6 %)	
Age							
20-30 yrs	6 (54.5 %)	6 (24.0 %)	.124 b	2 (25.0 %)	4 (40.0 %)	6 (33.3 %)	.799 c
> 30 yrs	5 (45.5 %)	19 (76.0 %)		6 (75.0 %)	6 (60.0 %)	12 (66.7 %)	
Position							
General practice	6 (54.5 %)	17 (68.0 %)	.475 b	2 (25.0 %)	7 (70.0 %)	14 (77.8 %)	.032 c
Specialist	5 (45.5 %)	8 (32.0 %)		6 (75.0 %)	3 (30.0 %)	4 (22.2 %)	
Occupational experience							
< = 10 yrs	8 (77.7 %)	15 (60.0 %)	.708 b	6 (75.0 %)	6 (60.0 %)	11 (61.1 %)	.758 c
> 10 yrs	3 (27.3 %)	10 (40.0 %)		2 (25.0 %)	4 (40.0 %)	7 (38.9 %)	
Work (hrs / wk)							
< = 30	2 (18.2 %)	12 (48.0 %)	.142 b	2 (25.0 %)	6 (60.0 %)	6 (33.3 %)	.252 c
> 30	9 (81.8 %)	13 (52.0 %)		6 (75.0 %)	4 (40.0 %)	12 (66.7 %)	

From b = Fisher's Exact test at P < 0.05

c = Pearson Chi –Square test at P < 0.05

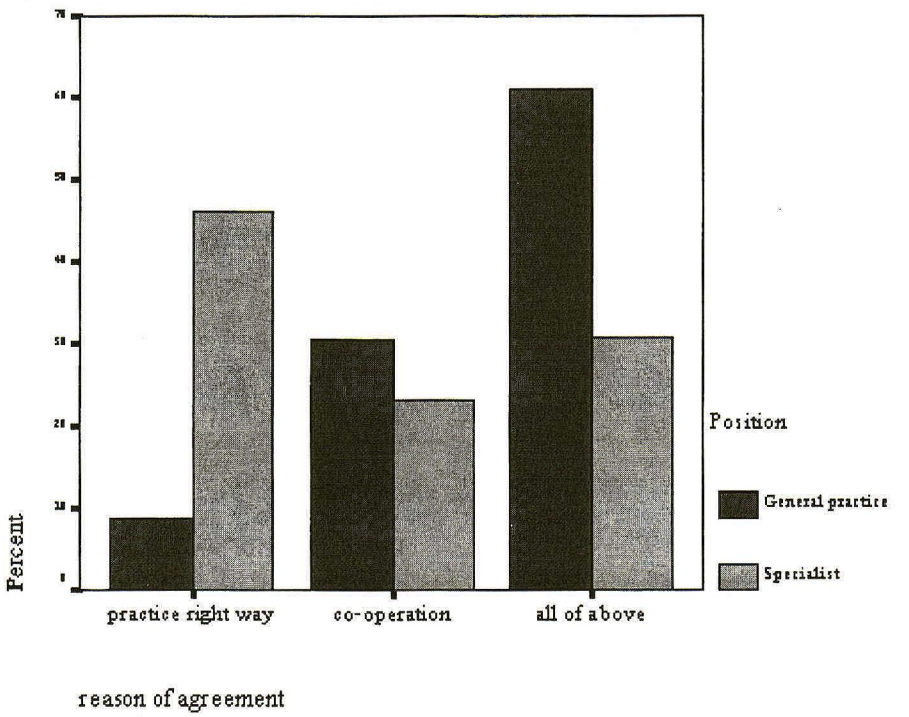

Figure 1. The bar chart shows the position of the dentist and those who had a reason of agreement . (p-value = 0.032)

Table 3 shows a Continuity Correction test and Fisher's Exact test at $p<0.05$; no statistically significant difference of the baseline data, as mentioned above, related to the usefulness of the VCD, the knowledge and understanding and the capable of treatment except one relation, which was in this table had statistically significant difference of the age of the dentists related to their knowledge and understanding (p-value = 0.045). This means that the dentists who were older than thirty years old had more knowledge and understanding of the issue than those who were younger, as shown in the bar chart (Figure 2).

According to table 2, every dentist who responded to the questionnaire showed his/her agreement of treatment with any reasons (100 %). Nobody disagreed with the treatment, this was illustrated that it was a standard treatment derived from co-operations of many fields of the profession.

Discussion

Odontogenic causes are the most common sources for spreading of maxillo-facial infections.[3,4] These infections can be life threatening. However, the outcome is rare and generally associated with an immunocompromized condition.[5,6] Odontogenic infection may present as an orbital cellulitis. Maxillary sinusitis could result from dental infection and the percentage varies considerably between 4.6 % and 47.0 %. The dental origin may be periapical infection of the maxillary tooth/teeth or as a complication of dental extraction. The manifestation of the spread of dental infection to the maxillary sinus has been termed endo-antral syndrome. Its accurate diagnosis

Table 3. Baseline data related to the usefulness of VCD, the knowledge and understanding from VCD and the capable of treatment.

	Usefulness of VCD		P - Value	Knowledge and understanding		P - Value	Capable of treatment		P - Value
	Fair	Good		Fair	Good		Fair	Good	
	N (%)	N (%)		N (%)	N (%)		N (%)	N (%)	
Gender									
Female	2 (50.0 %)	20 (62.5 %)	.634 [b]	12 (70.6 %)	10 (52.6 %)	.447 [a]	15 (68.2 %)	7 (50.0 %)	.459 [a]
Male	2 (50.0 %)	12 (37.5 %)		5 (29.4 %)	9 (47.4 %)		7 (31.8 %)	7 (50.0 %)	
Age									
20 – 30 yrs	0 (.0 %)	12 (37.5 %)	.278 [b]	9 (52.9 %)	3 (15.8 %)	.045 [a]	10 (45.5 %)	2 (14.3 %)	.076 [b]
> 30 yrs	4 (100 %)	20 (62.5 %)		8 (47.1 %)	16 (84.2 %)		12 (54.5 %)	12 (85.7 %)	
Position									
General practice	2 (50.0 %)	21 (65.6 %)	.609 [b]	11 (64.7 %)	12 (63.2 %)	1.000 [a]	13 (59.1 %)	10 (71.4 %)	.693 [a]
Specialist	2 (50.0 %)	11 (34.4 %)		6 (35.3 %)	7 (36.8 %)		9 (40.9 %)	4 (28.6 %)	
Occupational experience									
< = 10 yrs	1 (25.0 %)	22 (68.8 %)	.124 [b]	13 (76.5 %)	10 (52.6 %)	.255 [a]	14 (63.6 %)	9 (64.3 %)	1.000 [a]
> 10 yrs	3 (75.0 %)	10 (31.3 %)		4 (23.5 %)	9 (47.4 %)		8 (36.4 %)	5 (35.7 %)	
Work(hrs/wk)									
< = 30	2 (50.0 %)	12 (37.5 %)	.634 [b]	7 (41.2 %)	7 (36.8 %)	1.000 [a]	8 (36.4 %)	6 (42.9 %)	.969 [a]
> 30	2 (50.0 %)	20 (62.5 %)		10 (58.8 %)	12 (63.2 %)		14 (63.6 %)	8 (57.1 %)	

From a = Continuity Correction test at $P < 0.05$

b = Fisher's Exact test at $P < 0.05$

is important as it requires a prompt treatment to prevent further complications of orbital cellulitis. Complications of maxillary dental infection include maxillary sinusitis and parasinusitis.[7]

Deep neck infections are rare but potentially a fatal complication of pulpal abscess of the teeth. If an infection can progress rapidly from a toothache to a life-threatening infection, then it is critical that dentists be able to recognize the danger signs and identify the patients who are at risk. The outcomes can rapidly progress to Ludwig's angina and mediastinitis.[8] In 1939, Pearse HE Jr [9] reported that the mortality rate of mediastinitis was higher than 50 %.[10] This figure virtually remained unchanged for almost 50 years which was confirmed by another report in 1983; Estrera AS et al. estimated that the mortality rate was 42 %. In 1995, Alsoub H and Chacko KC [11] estimated that mediastinitis had a mortality rate of 25 %. Between 1983 and 1995, the mortality rate was decreased because of earlier detection and treatment,

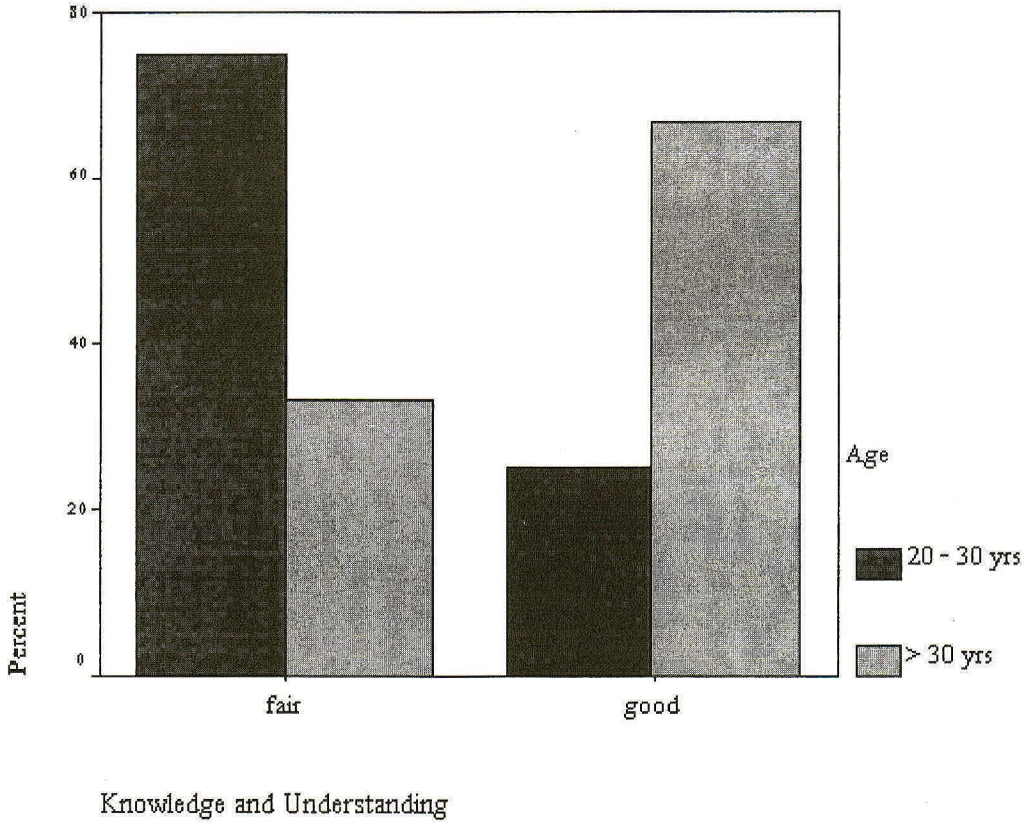

Figure 2. The bar chart shows the age of the dentist and those who learned from the VCD. (p-value = 0.045)

provided by contrast-enhanced CT imaging (CECT). Ludwig's angina is defined as bilateral cellulitis of the submandibular and sublingual spaces.[8] In 1997, Kurien M et al.[12] reported that the adult and the children mortality rate from Ludwig's angina was 10 % in both groups. Ludwig's angina has the potential to spread rapidly,resulting in mediastinitis and airway obstruction.[8,13]

Odontogenic infections is typically poly-microbial in nature, with mixed aerobic and anaerobic bacteria present.[14-16] In 1985, Heimdahl et al.[17] examined orofacial infections and correlated their clinical appearance with observed microbial etiology. Anaerobic gram negative rods (Bacteroides, Prevotella, Fusobacterium) were more frequently isolated from patients with severe infections than from those seemed to have mild infections ($p<0.05$). *Fusobacterium nucleatum* was predominately associated with severe infections ($p<0.05$).

In this study, the two last cases were patients who had swelling from the other origin, which reminded us of non-odontogenic origins which should be referred to specialists. Some dentists who responded to the questionnaires suggested that the details of this VCD dental consultation cases were not clear because of inadequate time spent per case (approximately 2 minutes per case). They were lack of some details. So they could not treat the patient in the real practice only by watching the VCD. But they agreed that it was a useful tool and they learned more for further study. This VCD on dental consultation cases was a tool for dentists to learn and to understand easily.

It was also a guideline for the practice in this field. However, several factors were needed such as specialty, knowledge and occupational experience, to help dentists performed good treatments. This study reminded every practitioner that most cases of oro-facial infections were swelling from odontogenic origins. The important steps are early detect and planning of a good treatment for the patient with the knowledge and training in the field of oral -surgery. Lastly, the researcher have prepared the VCDs dental consultation cases for anyone who are interested and asked for them.

Conclusion

This study concluded that aging and specialty of the dentists were important for their practice. The dentists who were older than thirty years old had more knowledge and understanding of the issue than those who were younger. The specialty of the dentists were more advantageous to reason of agreement in the whole treatment than the dentists who were general practice. However this study was a pilot study to correct and improve for the further studying media.

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