

# Case report

報告者 : Intern Group K

指導醫師 : 陳玉昆 主任

林立民 醫師

及口腔病理科全體醫師

2015.06.30





# General data

- ❖ Name : OOO
- ❖ Sex : Female
- ❖ Age : 37 y/o
- ❖ Native : 高雄市
- ❖ Marital status : Single
- ❖ Attending staff : OOO 醫師
- ❖ First visit : 104/05/22



# Chief Complaint

- ❖ Referred from OO LDC due to R't lower lesion over tooth 38 area.



104/05/22



# Present Illness



- ◆ This 37 y/o female went to OO dental clinic for routine dental examination on 2015/05/15 and Dr. OOO found the radiolucency image over the tooth 38 area. Therefore, Dr. OOO referred the P't to OS Dr.OOOfor further evaluation and treatment.



# Personal History

- ❖ Past medical history
  - ❖ Underlying disease: Denied
  - ❖ Hospitalization: Denied
  - ❖ Surgery under GA: Denied
  - ❖ Allergy: Denied



# Personal History

- ❖ Past Dental History
  - ❖ General routine dental treatment
- ❖ Attitude to dental treatment: Co-operative
- ❖ Risk factors related to malignancy
  - ❖ Alcohol (+), socially
  - ❖ Betel quid (-)
  - ❖ Cigarette (-)
- ❖ Special oral habits: Denied
- ❖ Irritation: Denied



# Extraoral examination

- ❖ Facial asymmetry (+)
- ❖ MMO = 40mm

# Intraoral examination



- ❖ Surface: Smooth
- ❖ Consistency: Soft to firm
- ❖ Color: Pink
- ❖ Pain (-)
- ❖ Tenderness (-)



104/05/22

# Image finding – Panorex



- ◆ There is a well-defined unilocular ovoid shaped circumcoronal radiolucency with cortical margin over the impacted tooth 38 of the posterior mandibular body, extending from the mesial side of the mesial root apex of tooth 37 to the mesial part of the left ramus and from the middle third of tooth 37 down to the mandibular canal, measuring approximately 1cm x 1.5cm in diameter. Tooth 38 was pushed down near the left mandibular angle. The inferior alveolar canal was pushed downward.

# Image finding – Panorex



- Tooth missing:12 26
- Prosthesis: 25x27
- Restoration: 16,17,36,37

2015/05/22

# Image finding – Chest PA(104/05/23)

## Impression

- 1) No overt radiological evidence of active cardiopulmonary disease.
- 2) Minimal thoracolumbar scoliosis.

# Image finding – EKG(104/05/23)



EKG Diagnosis: Normal Tracing



# Working diagnosis

# Working diagnosis



- ❖ Inflammation, cyst, or neoplasm?
- ❖ Benign or malignant?
- ❖ Central or peripheral?

# Inflammation?



	Our case	Inflammation
Redness	-	+
Swelling	-	+
Local heat	-	+
Pain	-	+



# Cyst or Neoplasm?

	Our case	Cyst
Aspiration	Unknown	+
Fluctuation	+	+/-
Well-defined border	+	+
Bony expansion	-	+/-

# Benign or malignant



	Our case	Benign	Malignant
Border	Well-defined	Well-defined	Ill-defined
Sclerotic margin	+	+	-
Destruction of cortical margin	-	+/-	+
Pain	-	-	+
Induration	-	-	+
Swelling with intact epithelium	+	+	-
Progress	Slow	Slow	Fast
Metastasis	Unknown	-	+/-

→ Our case is a **Cyst or neoplasm**



# Differential diagnosis

# Differential diagnosis

- Dentigerous cyst
- Keratocystic odontogenic tumor
- Unicystic ameloblastoma



# Dentigerous cyst



	Our case	Dentigerous cyst	
Gender	female	Male >female	
Age	37y/o	10~30 y/o	
Site	Mandible (third molar)	Mandible (third molar)	V
S/S	no	<b>Usually asymptomatic,</b> swelling or pain if infected,	V
size	1x1.5 cm in diameter	Average size 3cm~4cm	
X-ray features	well-defined unilocular ovoid shaped radiolucency with a sclerotic margins	<b>well-defined, smooth, unilocular, corticated margin, impacted tooth</b>	V
Clinical features	Color: pink Pain(-)	<b>Color: pink Pain(-)</b>	V

# Keratocystic odontogenic tumor



	<b>Our case</b>	<b>Keratocystic odontogenic tumor</b>	
Gender	female	Male >female	
Age	37y/o	10~40 yrs(60%)	V
Site	Mandible (third molar)	Posterior Mandibular, Mostly molar area(49%)	V
S/S	no	usually asymptomatic Large: pain, swelling or drainage.	V
size	1 x 1.5 cm in diameter	Varies	
X-ray features	Well-defined unilocular ovoid shaped radiolucency with a sclerotic margins	Well-defined unilocular radiolucency with smooth and often corticated margin 25~40% unerupted tooth involved	V
Clinical features	Color: pink Pain(-)	Usually asymptomatic	V

# Unicystic ameloblastoma



	<b>Our case</b>	<b>Unicystic ameloblastoma</b>	
Gender	female	none	
Age	37y/o	Young age, average 23	
Site	Mandible (third molar)	Post .Mandible	V
S/S	no	Nil	
size	1x1.5 cm in diameter	Average size 4.3cm~6.3cm	
X-ray features	Well-defined unilocular ovoid shaped radiolucency with a sclerotic margins	Well-defined, smooth, unilocular radiolucency with corticated margin	V
Clinical features	Color: pink Pain(-)	Color: pink Pain(-)	V



# Clinical impression

Keratocystic odontogenetic tumor  
over tooth 38

Impaction of tooth 18 28 48



# Treatment Plan

- Cystic enucleation + Complicated odontectomy, 38



2015/05/22



2015/05/22



# Treatment course(104/6/10)

## ❖ Surgery

1. Routine patient identification check and time out
2. Patient was put in supine position, GA with NETT intubation
3. Routine aseptic and OMS draping procedures were done
4. Prophylactic antibiotic: Cefazolin(1g) 1 vial + Aqdest 20 ml IV was injected.
5. Throat pack in and OP started
6. Intrasulcular incision from tooth 37 mesial and vertical incision over 37 distal side.



# Treatment course(104/6/10)

## ❖ Surgery

7. Flap reflection
8. Bone window created over 37 root area and bone tumor excision were done.
9. Complicated odontectomy of 38
10. Copious N/S irrigation
11. Sutured the flap in position with 3-0 Vicryl.
12. Throat pack out and OP ended.



# Treatment course(104/6/10)

Pre-OP



2015/05/22

OP



2015/06/10



2015/06/10

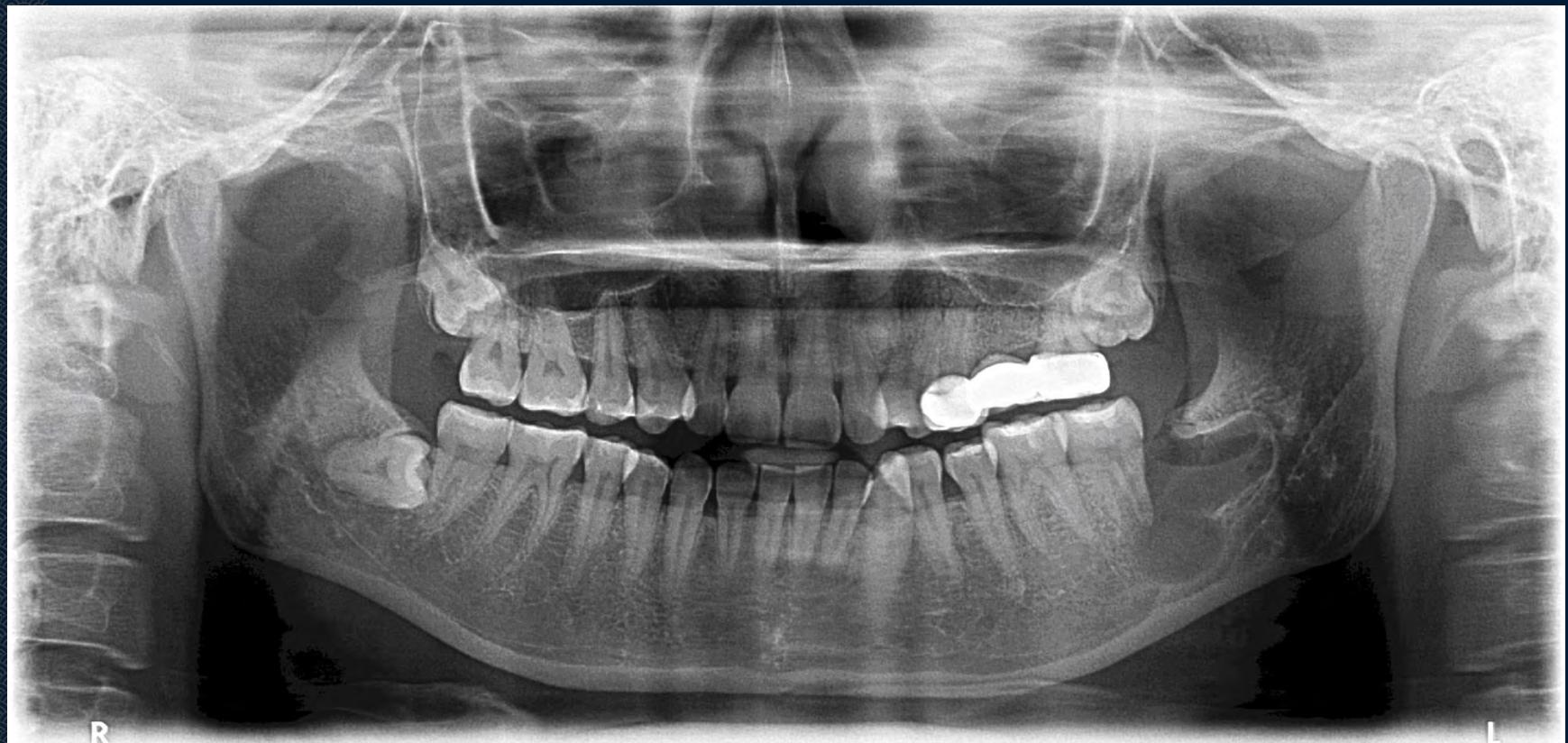


2015/05/22



2015/06/10

# Post-OP panoramic view



2015/06/11

# Histopathology report(104/6/12)



臨床診斷：Developmental odontogenic cyst

## Pathologic diagnosis:

Bone, mandible, tooth 38, left, excision, dentigerous cyst

## Gross Examination:

The specimen submitted consists of 1 soft tissue fragment in 1 bag, measuring 2.0 x 1.0 x 0.2 cm in size, in fresh state. Grossly, it is reddish in color and rubbery in consistency.

All for section. Jar 0.

## Microscopic Examination:

The slide contains two identical groups of irregular-shaped soft tissue specimens.

Microscopically, it shows dentigerous cyst.

# Treatment course



104/6/19

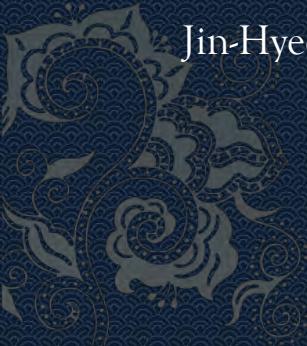
- ❖ Wound condition: stable
- ❖ Explained H-P report
- ❖ Suture remove, topical treatment with G-I
- ❖ Reinforce home care
- ❖ Post op 3 months F/U, check x-ray

# Discussion

## Journal

Characteristics Of Bony Changes And Tooth Displacement In The  
Mandibular Cystic Lesion Involving The Impacted Third Molar

Jin-Hyeok Lee, Sung-Min Kim, Hak-Jin Kim, Kug-Jin Jeon, Kwang-Ho Park, and Jong-Ki Huh





# Introduction

- ◆ Similar radiographic features often leads to unsuspected postoperative histologic findings contradicting the predicted lesion based on radiographic finding

# Introduction



- ❖ Most common mandibular odontogenic lesion:
  1. Dentigerous cyst (DC)
  2. Keratocyst odontogenic tumor (KCOT)
  3. Ameloblastoma (AB)

# Introduction



- ❖ Correlation between the histopathologic and radiologic characteristics of cystic and cystic-appearing lesions



# Materials and Methods

- ❖ 81 patients of the 262 patients between September 2005 and April 2014 in Gangnam Severance Hospital
- ❖ Panoramic & CT findings of the mandibular cystic lesions with **impacted mandibular third molar(IMTM)**

# Materials and Methods

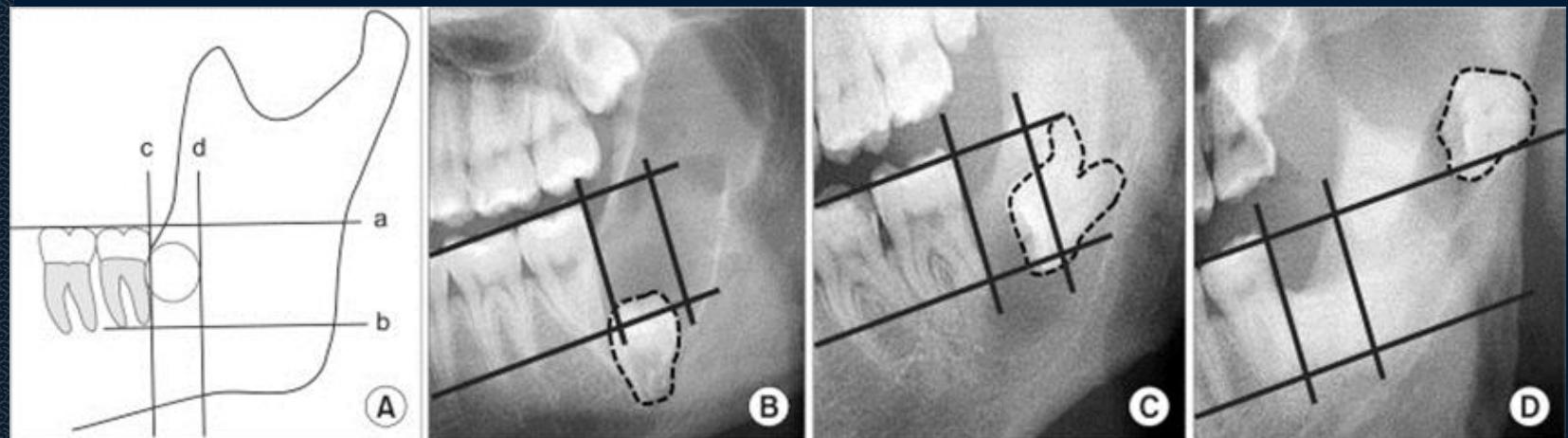


- ❖ 1. Displacement of the IMTM
  - ❖ 1) Mesio-distal (MD) displacement and direction of IMTM
  - ❖ 2) Bucco-lingual (BL) displacement of the IMTM
- ❖ 2. Calculation of lesion size
- ❖ 3. Growth pattern of mandibular cystic lesions
  - ❖ 1) Anterior-posterior growth pattern
  - ❖ 2) BL growth pattern
- ❖ 4. Occurrence of cortical bone expansion and loss of bony continuity
- ❖ 5. Root resorption
- ❖ 6. Statistical analysis



# Displacement of the IMTM

- ◆ Mesio-distal (MD) displacement and direction of IMTM



- ◆ B: downward      C: backward      D: back-upward

# Displacement of the IMTM



- ❖ Bucco-lingual (BL) displacement of the IMTM



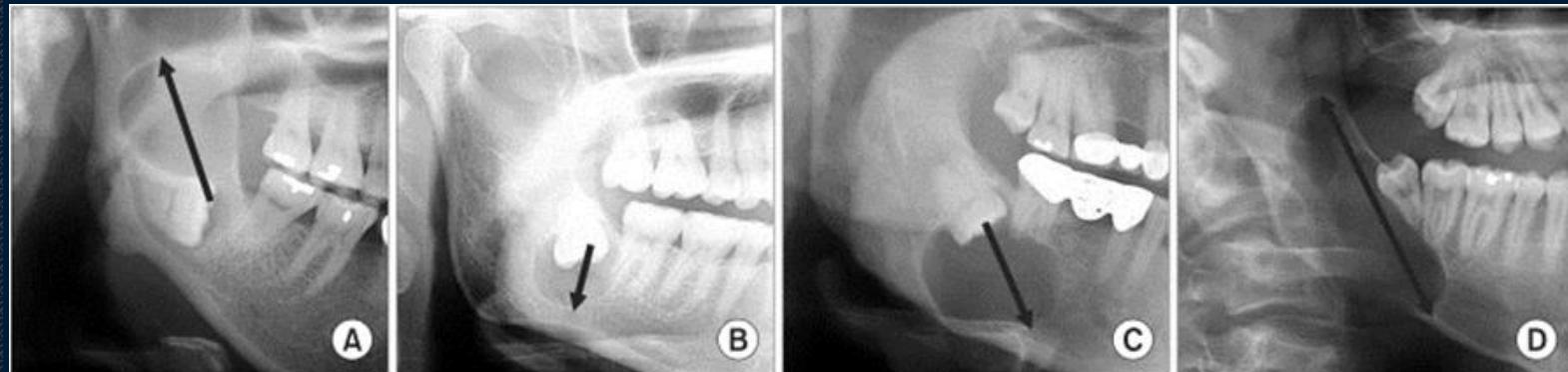
A: no displacement

B: lingual displacement    C: buccal displacement

# Growth pattern of mandibular cystic lesions



## ❖ Anterior-posterior growth pattern



A: Back-upward

B: Downward

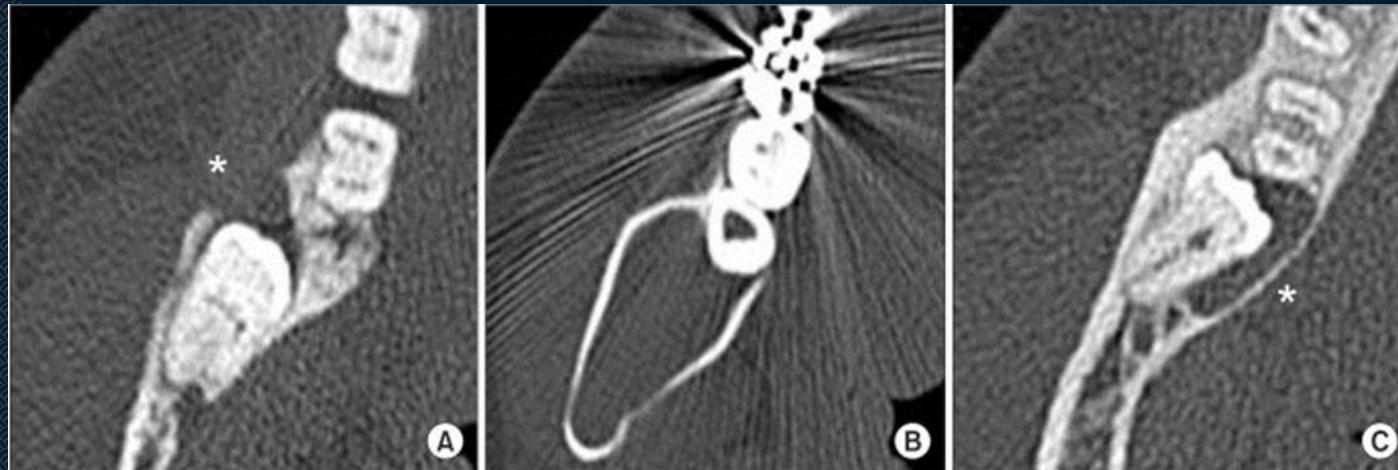
C: Down-forward

D: Down-forward and back-upward



# Growth pattern of mandibular cystic lesions

- ◆ BL growth pattern



- A. Buccal
- B. Bucco-lingual
- C. Lingual

# Results



- ❖ Age and sex distributions according to pathologic diagnosis

Diagnosis	Number of patients		Mean age (yr)	Total, n (%)
	Male	Female		
Dentigerous cyst	41	22	42.5	63 (77.8)
Odontogenic keratocyst	3	4	33.9	7 (8.6)
Ameloblastoma	6	1	22.9	7 (8.6)
Paradental cyst	2	1	51.7	3 (3.7)
Glandular odontogenic cyst	1	0	38	1 (1.2)
Total	53	28	40.3	81 (100)

# Results



- ◆ Displacement type of impacted mandibular third molar

Displacement type	Displacement	Direction	DC	Non-DC		Others	Total	P-value
				OKC	AB			
Mesio-distal	No	Downward	51 (80.9)	2 (28.6)	1 (14.3)	4 (100)	58 (71.6)	0.001 <sup>1</sup>
	Yes		9 (14.3)	4 (57.1)	3 (42.9)	0 (0)	16 (19.8)	
		Backward	1 (1.6)	0 (0)	2 (28.6)	0 (0)	3 (3.7)	
		Back-upward	2 (3.2)	1 (14.3)	1 (14.3)	0 (0)	4 (4.9)	
	Total		63	7	7	4	81 (100)	
Bucco-lingual	No	Buccal	45 (91.8)	4 (80)	6 (85.7)	2 (100)	57 (90.5)	0.558 <sup>2</sup>
	Yes		0 (0)	0 (0)	1 (14.3)	0 (0)	1 (1.6)	
		Lingual	4 (8.2)	1 (20)	0 (0)	0 (0)	5 (7.9)	
	Total		49	5	7	2	63 (100)	

MD: DC group << non-DC group

BL: only 7.9% (5/63) of cases exhibited lingual displacement, and 1.6% (1/63) of cases exhibited buccal displacement



# Results

- ❖ Ratio between bucco-lingual (BL) width and mesio-distal (MD) width of lesions

Width and ratio	DC	Non-DC		Others	<i>P</i> -value
		OKC	AB		
BL width (mm)	12.57	14.94	21.74	12.74	-
MD width (mm)	20.66	19.26	27.93	16.65	-
BL/MD ratio	0.65	0.78	0.81	0.79	0.004 <sup>1</sup>

BL/MD: AB > OKC > DC

# Results



## ❖ Growth pattern of mandibular cystic lesions

Image	Growth	DC	Non-DC		Others	Total
			OKC	AB		
Panoramic view	Inside the reference line	7 (11.1)	0 (0)	0 (0)	0 (0)	7 (8.6)
	Downward	7 (11.1)	1 (14.3)	0 (0)	2 (50)	10 (12.3)
	Down-forward	26 (41.3)	1 (14.3)	1 (14.3)	2 (50)	30 (37.0)
	Up-backward	13 (20.6)	2 (28.6)	1 (14.3)	0 (0)	16 (19.8)
	Down-forward and up-backward	10 (15.9)	3 (42.9)	5 (71.4)	0 (0)	18 (22.2)
	Total	63	7	7	4	81 (100)
CT view	Central	3 (6.1)	0 (0)	0 (0)	0 (0)	3 (4.8)
	Buccal	1 (2.0)	0 (0)	0 (0)	0 (0)	1 (1.6)
	Lingual	11 (22.4)	0 (0)	0 (0)	0 (0)	11 (17.5)
	Buccal and lingual	34 (69.4)	5 (100)	7 (100)	2 (100)	48 (76.2)
	Total	49	5	7	2	63 (100)

MD: DC : most down-forward

AB & OKC : down-forward and back-upward

BL: no significant difference

# Results



- ◆ Occurrence of cortical bone expansion and loss of bony continuity on computed tomography image

	Direction	DC	Non-DC		Others	Total	P-value
			OKC	AB			
No expansion		16 (32.7)	0 (0)	0 (0)	0 (0)	16 (25.4)	0.026 <sup>1</sup>
Cortical bone expansion	Buccal	1 (2.0)	0 (0)	0 (0)	0 (0)	1 (1.6)	0.102 <sup>2</sup>
	Lingual	11 (22.4)	0 (0)	0 (0)	0 (0)	11 (17.5)	
	Buccal and lingual	21 (42.9)	5 (100)	7 (100)	2 (100)	35 (55.6)	
Loss of bony continuity	Yes	18 (36.7)	3 (60)	5 (71.4)	2 (100)	28 (44.4)	0.102 <sup>2</sup>
	No	31 (63.3)	2 (40)	2 (28.6)	0 (0)	35 (55.6)	
Total		49	5	7	2	63 (100)	

Bone expansion : non-DC group > DCs

Loss of bony continuity: non-DC > DCs

# Results



- ❖ Root resorption of the adjacent second molar on computed tomography

Root resorption	DC	Non-DC		Others	Total	P-value
		OKC	AB			
Yes	21 (58.3)	2 (66.7)	4 (66.7)	1 (50) <sup>2</sup>	28 (59.6)	0.721 <sup>4</sup>
No	15 (41.7)	1 (33.3)	2 (33.3)	1 (50) <sup>3</sup>	19 (40.4)	
Total	36	3	6	2	47 (100)	

No significant difference

# Discussion



- ◆ The anatomic position, growth period, and lesion size can lead to differences in lesion morphology, and the different growth patterns of the lesions can influence displacement of the impacted tooth



- ❖ Prevalence of tumors and cystic lesions associated with 9,994 impacted third molars, cystic lesions were more commonly observed (2.31%; n=231) than tumorous lesions.
  
- ❖ Among tumors, AB was the most commonly observed (0.41%, n=41) and was identified as the most common odontogenic tumor



- ❖ MD displacement of IMTMs(Panorax)

If Yes → OKC or AB

No → DCs



- ❖ BL displacement of IMTMs (CT axial view)
  1. Lingual displacement >> buccal displacement
  2. DC and non-DC group was not statistically significant



- ❖ OKC exhibits a faster growth pattern. AB is also known to be relatively invasive and aggressive.

BL/MD ratio: non-DC groups > DCs group



- ❖ MD growth direction of lesion  
DC group: unilateral growth
  
- ❖ BL growth direction of lesion  
DCs: lingual side(22.4%).  
OKC & AB: simultaneous BL growth(100%)



- ❖ Bone expansion and loss of bony continuity  
OKC & AB > DCs



- ❖ Root resorption rates
  - OKC & AB: 66.7%
  - DCs: 58.3%
- ❖ Not useful for differential diagnosis

# Conclusion



- ❖ Mandibular cystic lesions with IMTM
- ❖ 1<sup>st</sup> considered: dentigerous cyst
- ❖ When the third molar displacement and cortical bone absorption are observed
- ❖ KCOT or AB should be considered

# 醫學倫理討論





# Tom Beauchamp & James Childress

## 六(七)大原則 - 1979

1. 生命的神聖性(Sanctity of life) :
2. 行善原則(Beneficence)：醫師要盡其所能延長病人之生命且減輕病人之痛苦。
3. 誠信原則(Veracity):醫師對其病人有「以誠信相對待」的義務。
4. 自主原則(Autonomy):病患對其己身之診療決定的自主權必須得到醫師的尊重。
5. 不傷害原則(Nonmaleficence):醫師要盡其所能避免病人承受不必要的身心傷害。
6. 保密原則(Confidentiality):醫師對病人的病情負有保密的責任。
7. 公義原則(Justice): 醫師在面對有限的醫療資源時，應以社會公平、正義的考量來協助合理分配此醫療資源給真正最需要它的人。



# 生命的神聖性

- 在《聖經》的第一篇<創世紀>中,上帝告訴以色列人說:「上帝按他自己的形象造人。」「你將是神聖的,因為我是神聖的。」「生命神聖」觀即由此衍生而得。
- 該觀點主張人的生命是無條件的,有價值及神聖的,人繼承了上帝的品質,包括一切價值的來源-內具的善 (*intrinsic goodness*),因此必須受到尊重。
- 藉此瞭解他個人生命的原真,而認知他個人存活在世上的主要工作和生活的目的,找到個人存在的意義、價值、目的與任務。



# 行善原則

- ◆ 做了Excision 後是否有減輕病人的疼痛感？或是使病人更不舒服？  
→有完整去除病灶區域並拍照記錄術後情形。並告知術後傷口會疼痛，但持續癒合後疼痛會逐漸緩解



# 誠信原則

- ◆ 對於患者的疾病嚴重程度是否有確實地通知，盡到告知的義務？
- ◆ 是否有清楚的向病人說明清楚疾病病程、治療計畫、預後、風險？  
→皆以已告知病人後，經同意才進行手術。



# 自主原則

- ◆ 充分說明病情及治療計畫、風險之後，是否有讓病人充分自主地選擇治療計畫？  
→ 病人及家屬選擇並同意醫師的建議。
- ◆ 在做全身麻醉以前，是否有說明完整之後再請病人自主的簽名同意？  
→ 已充分說明並與家屬溝通。



# 不傷害原則

- ❖ 是否有先完整瞭解病人的病史?  
→治療前有完整蒐集病史資料，並與病患溝通後擬定進一步的治療計畫
  
- ❖ 手術過程中，是否有造成不必要的醫源性的傷害？  
→沒有不必要的醫源性傷害。



# 保密原則

## 告知的對象

1. 本人為原則
2. 病人未明示反對時，亦得告知其配偶與親屬
3. 病人為未成年人時，亦須告知其法定代理人
4. 若病人意識不清或無決定能力，應須告知其法定代理人、配偶、親屬或關係人
5. 病人得以書面敘明僅向特定之人告知或對特定對象不予以告知



# 公義原則

## ◆ 手術的必要性？

→ Dentigerous cyst最佳的治療方式是 surgical excision，將病灶完整的清除(enucleation)才能將復發率(recurrence rate)降到最低。



# 醫學倫理總結

- ◆ 在病例撰寫方面(病兆描述,治療計畫,病人態度)應書寫詳盡，使治療過程有詳實的記錄及治療順利。
- ◆ 在進行治療之前,須請病人簽屬同意書
- ◆ 應在不違反醫學倫理的原則之下進行治療的行為

# Reference



- ❖ P.679~681,P.683~686,P.702~710, in Oral and Maxillofacial Pathology, third edition
- ❖ PubMed Search: Dentigerous cyst [title]

THANK YOU FOR  
YOUR ATTENTION!

