

原文題目(出處)：	A CBCT measurement of the mandibular buccal bone thickness in dentate adults. Oral Surg 2015;8:38-41
原文作者姓名：	Talaat WM
通訊作者學校：	College of Dental Medicine, University of Sharjah, Sharjah, UAE
報告者姓名(組別)：	蔡文聖 Intern H 組
報告日期：	104/3/9

內文：

Introduction

Dexterity in different surgical procedures in the mandible demands accurate pre-operative assessment and measurements of key areas in the working field. The mandibular cortical bone thickness, the distance from the outer bony cortex to the roots and the distance from the bony cortex to the mandibular canal.

The article provides valuable information about the thickness of the outer cortex in the posterior mandible and its clinical significances during the treatment planning for bone grafting, mandibular fractures and dental implants.

Monocortical fixation in the outer cortical plate is sufficient to support the strains resulting from the masticatory muscles. The fixation of mandibular fractures with miniplates and monocortical screws requires knowledge of the average buccal cortical bone thickness during implant therapy, the knowledge of the thickness of the cortical bone is important. Implant stability is necessary for osseointegration and is aided largely by cortical bone.

Autogenous bone grafts are still considered the ‘gold standard’ in alveolar ridge augmentation. The knowledge of cortical bone thickness is also critical during harvesting a ramus graft.

The second molar region provides the thickest outer cortex in the posterior mandible minimising the risk of injury to tooth roots or inferior alveolar canal.

The purpose of this study was to measure the cortical bone thickness of the mandible and the proximity of the tooth roots and the inferior alveolar canal to the outer cortex in dentate adults using cone-beam computed tomography (CBCT)

Materials and methods:

Eighty CBCT scans were analysed. Buccal cortical plate and trabecular bone thickness were measured.

These patients were retrospectively selected from the college’s database from those who underwent a CBCT scan for evaluation of lower wisdom teeth prior to surgery. Exclusion criteria included any abnormality that would alter the bone thickness as mandibular fractures, tumours, bone disease, tooth loss or growth alterations

A total of 80 individuals (63.75% men and 36.25% women) aged 24–53 (mean 37.04 years) were analysed.

Measurements of canine, first premolar, second premolar, first molar and second molar regions were taken at following levels: cortical plate thickness at the level of the midpoint of the midapical third of the root and at the level of apex, cortical plate and trabecular bone thickness at the level of the midpoint of the midapical third of the root, at the level of apex and at the level of inferior alveolar canal.

viewing software using a digital ruler aligned perpendicular to the cortex in coronal views

Results

Cortical bone thickness was greatest at the second molar region with 2.66 ± 0.72 at the root’s midapical third, 3.27 ± 0.52 at the apex and 3.12 ± 0.64 at the level of the

canal. Cortical plate and trabecular bone thickness was greatest at the second molar region with 4.72 ± 0.86 at the midapical third, 6.49 ± 0.8 at the apex and 5.3 ± 0.6 at the level of the canal.

Table 1 Measurements of the bone thickness at different locations

Measured areas	Canine	First premolar	Second premolar	First molar	Second molar
Cortical plate thickness at the level of midapical third	1.64 ± 0.46	1.59 ± 0.48	1.80 ± 0.63	2.3 ± 0.64	2.66 ± 0.72
Cortical plate thickness at the level of apex	1.91 ± 0.6	2.51 ± 0.49	1.74 ± 0.5	2.47 ± 0.45	3.27 ± 0.52
Cortical plate and trabecular bone thickness at the level of midapical third	2.3 ± 0.64	2.74 ± 0.8	3.0 ± 0.62	2.73 ± 0.55	4.72 ± 0.86
Cortical plate and trabecular bone thickness at the level of apex	3.7 ± 0.91	3.56 ± 0.72	3.34 ± 0.82	3.4 ± 0.75	6.49 ± 0.8
Cortical plate thickness at the level of inferior alveolar canal				2.92 ± 0.51	3.12 ± 0.64
Cortical plate and trabecular bone thickness at the level of inferior alveolar canal				4.1 ± 0.8	5.3 ± 0.6

Conclusions

The ideal sites for placement of the screws during miniplate fixation of mandibular fractures may risk the tooth roots and the inferior alveolar canal

Miniplate osteosynthesis has become the treatment of choice for mandibular fractures within the past two decades. Miniplates are manufactured in varying standard lengths but with a uniform thickness of 0.9–1.0 mm.

A subapical monocortical malleable four-hole plate should be used in the horizontal ramus, following the course of the line of tension at the base of the alveolar process. Knowledge of the cortical bone thickness and the distance to the root and inferior alveolar canal is mandatory during treatment planning for mandibular fractures

In implant therapy, achieving primary stability requires the availability of thick cortical bone plates. The knowledge of the average cortical bone thickness in the mandible is of primary importance during treatment planning in dental implant therapy as CBCT or conventional CT machines are not readily available in each clinic. Also the knowledge of the cortical bone thickness is of great importance when planning for bone grafts from the body of the mandible

In conclusion, the buccal bone thickness of the mandible at the second molar region provides the safest zone for placement of 4 mm monocortical screws and provide a thicker bone graft.

題號	題目
1	關於顎骨骨折的癒合，下列何者錯誤 (A) 骨折的癒合同時需要 osteoclast 和 osteoblast (B) 骨折的癒合分為 primary intention healing & secondary intention healing (C) 骨折處若沒良好的固定，會阻礙新生血管形成而延緩癒合 (D) 骨折癒合所需要造骨細胞，來原只有骨膜和骨內膜
答案(D)	出處：當代口腔外科學
題號	題目
2	關於下齒槽神經受損原因，何者不包含在內 (A) 拔除下顎阻生第三大白齒 (B) Sagittal split ramus osteotomy (C) Mandibular symphysis fracture (D) Mandibular body fracture
答案(C)	出處：當代口腔外科學