Inquiry of the Dental Council
Re: Dr. TSE Siu-kwong, Anthony

Dates of hearing: 17 & 24 June 2010; 19 August 2010 and 1 & 2 November 2010

1. The Defendant, Dr. Tse Siu-kwong Anthony, is charged as follows:

> "That he, being a registered dentist, in about May 2006, disregarded his professional responsibility to adequately treat and care for his patient [redacted] ("[redacted]"), or otherwise neglected his professional duties to [redacted], in that he failed to properly assess and determine the position and/or depth of the implant placement prior to performing implant surgery for [redacted]; and that in relation to the facts alleged he has been guilty of unprofessional conduct."

Facts of the case

2. The patient had 2 dental implant surgeries done by the Defendant, at the 36 region in 2001, and at the 16 region in 2005. The implants at teeth 36 and 16 were uneventful.

3. In early 2006, the patient had his tooth 46 extracted. On 2 May 2006, he went to the Defendant to discuss his intention to have a dental implant at the 46 site. The Defendant took a periapical radiograph and made a study model. The periapical radiograph covered only part of the inferior dental nerve ("IDN") canal at the 47 region, but not at the 45 and 46 region at all.

4. The Defendant found that there was severe bone loss at the 46 region, especially close to the 45 region. He considered 3 treatment options: (a) a bone graft in the 46 region; (b) a single implant closer to 47; and (c) two regular platform implants, one closer to 45 ("the anterior implant") and the other closer to 47 ("the posterior implant"), with the anterior implant placed more lingually to maximize the bone available to avoid the IDN at the mental foramen region.

5. On 3 May 2006, the Defendant proceeded with option (c). He drilled 2 holes for the implants, firstly the posterior followed by the anterior. During insertion of the anterior implant the patient complained of pain, and the Defendant slightly elevated the anterior implant.

6. On 4 May 2006, the patient returned to see the Defendant because of numbness, sensation loss and muscle tightening in the right chin and right lower lip. The Defendant further elevated the anterior implant by more than 1 mm.

7. On the same day, the patient was worried and consulted his usual dentist. That dentist arranged for a CT scan to be taken. The CT scan showed that the tip of the anterior implant extended into the superior cortex of the IDN canal, and the tip of the posterior implant extended to the superior cortex of the IDN canal. He telephoned the Defendant and made an appointment to return on 6 May 2006 with the CT scan films.

8. On 6 May 2006, the Defendant upon seeing the CT scan was surprised that the anterior

implant appeared to be overlapping the IDN. With the patient's agreement, he removed the anterior implant completely. He also elevated the posterior implant slightly as a precaution.

9. In the following 6 months up to November 2006, the sensation loss improved but the muscle tightening had not improved. The patient then sought a second opinion from a specialist in Oral and Maxillofacial Surgery, and was advised that usually little progress would be possible for nerve injury after 6 months.

10. The patient made a complaint to the Dental Council in June 2007.

Findings of the Council

11. There is dispute as to whether the Defendant had suggested the option of bone graft to the patient but the option was rejected by the patient. The patient said that the Defendant only advised him that 2 implants would have to be placed and never explained the risks and possible outcome of the operation. While the Defendant's case is that he had suggested all 3 options with detailed explanation of the advantages and disadvantages but the patient refused to have bone graft, that case was never put to the patient in cross-examination, nor was the patient's evidence in this respect challenged.

12. While we have reservation as to whether the Defendant had suggested bone grafting and whether the patient had rejected it in view of the fact that the 2-implants option was a compromised option for a site with severe bone loss, it is unnecessary for us to make a finding on this as the charge is not in respect of informed consent to surgery.

13. The Defendant claimed that he was under pressure from the patient to have the implant surgery done urgently as the patient was on holiday on 3 May 2006. He proceeded with the pre-operative planning on the basis of the periapical radiograph taken on 2 May 2006, together with a periapical radiograph taken in 2001 and a panoramic radiograph taken in 2004 when the tooth 46 was still in situ.

14. Implant surgery is an elective surgery. There is no urgency at all to proceed with the surgery, particularly if investigation necessary for a proper assessment and planning of the surgery had not yet been done. On the other hand, registered dentists as professionals must exercise independent judgment in order to perform dental operations according to the required professional standard, and must not allow their judgment to be compromised and be pressurized by clients or other persons into performing sub-standard dental operations. In particular, invasive treatment with significant risks cannot be compromised for reasons of convenience such as holiday arrangements.

15. In invasive treatments including implant surgery, careful pre-operative planning is essential for a proper surgery, and the necessary investigation including imaging must be performed to enable a proper assessment of (i) the site and related structures; (ii) position, direction and depth of drilling; and (iii) diameter, length and type of implant to be inserted.

16. While the execution of any pre-operative planning is subject to verification and modification during the surgery, it is unacceptable to rely on a defective and incomplete planning and leave matters which should be assessed and planned in the pre-operative stage for determination during the surgery. If the uncertainties can be eliminated and

ascertained by non-invasive methods before surgery, a dentist must eliminate such uncertainties before embarking on the surgery.

17. One of the important purposes of planning in invasive and elective surgery is to ascertain in advance that the proposed surgery is viable, so as to avoid subjecting the patient to unnecessary risks only to discover intra-operatively that the surgery is in fact unviable. For implant surgery, the width and depth of bone available for the implant will determine whether the implant is viable.

18. If during pre-operative assessment it is found that the proposed surgery is unviable, the patient should be advised of the other options available, including the option of no treatment in accordance with the principle of non-maleficience, i.e. do no harm.

19. Implant surgery in the posterior mandibular region requires particular precision, in view of the risk of damage to the IDN.

20. The whole purpose of making radiographic imaging during the pre-operative planning phase is to identify the location of the IDN as closely as possible and the bone available for placing the dental implant, so as to avoid injury to the IDN. The IDN canal does not follow a straight path, and changes course where it emerges from the mental foramen which is near the lower second premolar region. The bone profile changes over time, especially if the patient has been having periodontal problems or had extractions at that region. It is impossible to rely on radiographs taken a number of years before for such assessment and planning. A radiograph which does not show the course and location of the IDN canal at the relevant region is not acceptable.

21. Back in 2001, the Defendant was fully aware from the periapical radiograph that there was bone resorption at the 46 region, especially near to the 45 region. This was again obvious in the panoramic radiograph taken in 2004. With the extraction of tooth 46 in early 2006, there would be further bone loss. The previous radiographs are unreliable for the purpose of determining the position and length of implant to be placed in May 2006.

22. The Defendant claims that on the basis of the 2006 periapical radiograph and the 2004 panoramic radiograph, he was able to estimate the approximate location of the IDN canal at the 45 and 46 region. For reasons that we have already set out, such estimation is crude, unreliable and completely unsuitable for the precision required in implant surgery.

23. In fact, the Defence expert Prof. L K Cheung says that if his students at the Dental Faculty of the University of Hong Kong makes a pre-operative planning based on the same radiographs relied on by the Defendant, he will certainly ask the student to take another radiograph clearly showing the location of the IDN canal at the relevant region.

24. It has been contended that dentists in private practice can adopt a lower standard than that adopted for dental students. We must point out that the standard required for registration as a dentist is the minimum standard required of all registered dentists, irrespective of whether they are in private practice or in public/academic institutions. Given the duty of the Dental Council to protect the public from those who are incompetent or unfit to practise, it is a dangerous and fallacious argument that sub-standard performance can be tolerated in private practice.

25. The Defendant claims that he had taken extensive measures during the pre-operative planning to map out the surgery, including tracing the IDN canal on an implant overlaid

grid, use of the long cone parallel beam technique in taking the periapical radiograph, dental and wax-up models, and calculations based on possible magnification in radiographic imaging. If he had taken such extensive measures, that begs the question of why, instead of going through such extensive and yet indirect measures, he did not adopt the much simpler and much more reliable measure of taking a radiograph clearly showing the IDN canal at the 45 and 46 region. The measures he claims bear the resemblance of elaborate ex post facto rationalization of an inadequate approach to pre-operative assessment and planning. We are not persuaded that he had taken such measures as he claimed.

26. The Defendant claims that according to his calculation, the depth of the implant he planned was entirely safe and would not hit the IDN. Nevertheless, the fallacy of such argument is borne out by the fact that despite having elevated the anterior implant twice it was still shown to be overlapping the IDN canal and he eventually decided to remove the anterior implant altogether.

27. We are satisfied that the Defendant in failing to take a pre-operative radiograph clearly showing all the relevant structures for assessing and planning the position and depth of the implant placement has not met the standard required of registered dentists in performing implant surgery. Such conduct would reasonably be regarded as disgraceful and dishonourable by registered dentists of good repute and competency, and therefore constitutes unprofessional conduct.

28. We find the Defendant guilty as charged.

Sentencing

29. The Defendant has a clear record. He has performed services to the dental profession.

30. The Defendant is a dentist with long experience. While the case will have significant impact on him, from the way he conducted the trial it does not seem that he has gained insight into his problem.

31. The patient has suffered injuries from the surgery. While it is not clear whether he has recovered completely from those injuries, he has suffered injuries for at least a significant period of time.

32. Damage to the IDN is an obvious risk in surgeries at the posterior mandibular region, and such risk can be serious. Registered dentists must take proper precautions to minimize such risk. The required precaution of proper imaging in this case is not particularly onerous.

33. Having regard to the gravity of the case and the mitigation advanced, we order that the Defendant's name be removed from the General Register for a period of 3 months. We further order that the operation of the removal order be suspended for a period of 12 months, subject to the condition that he does not commit further disciplinary offence during the suspension period.

Dr. Homer Tso, BBS, JP
Chairman, Dental Council