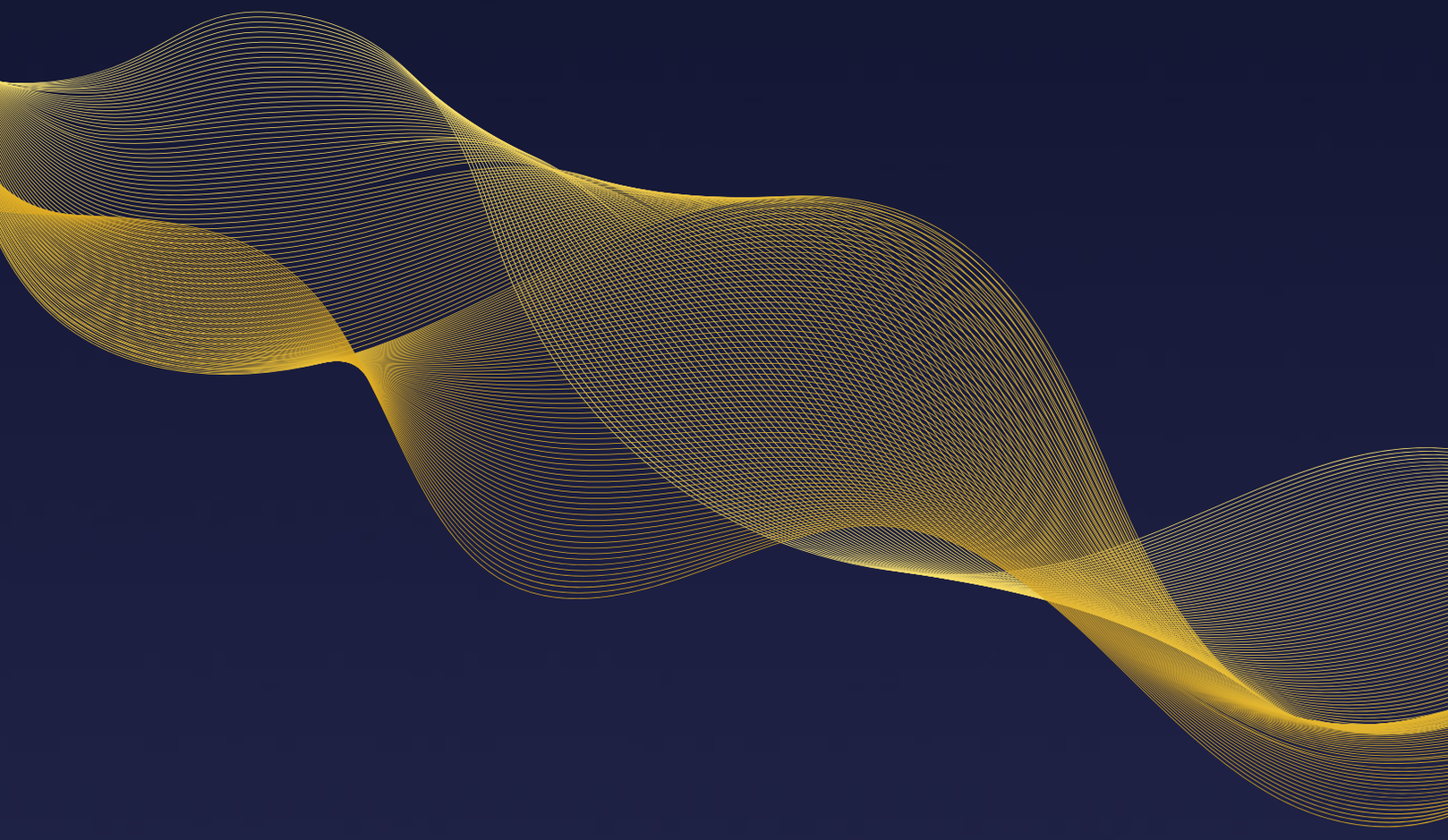
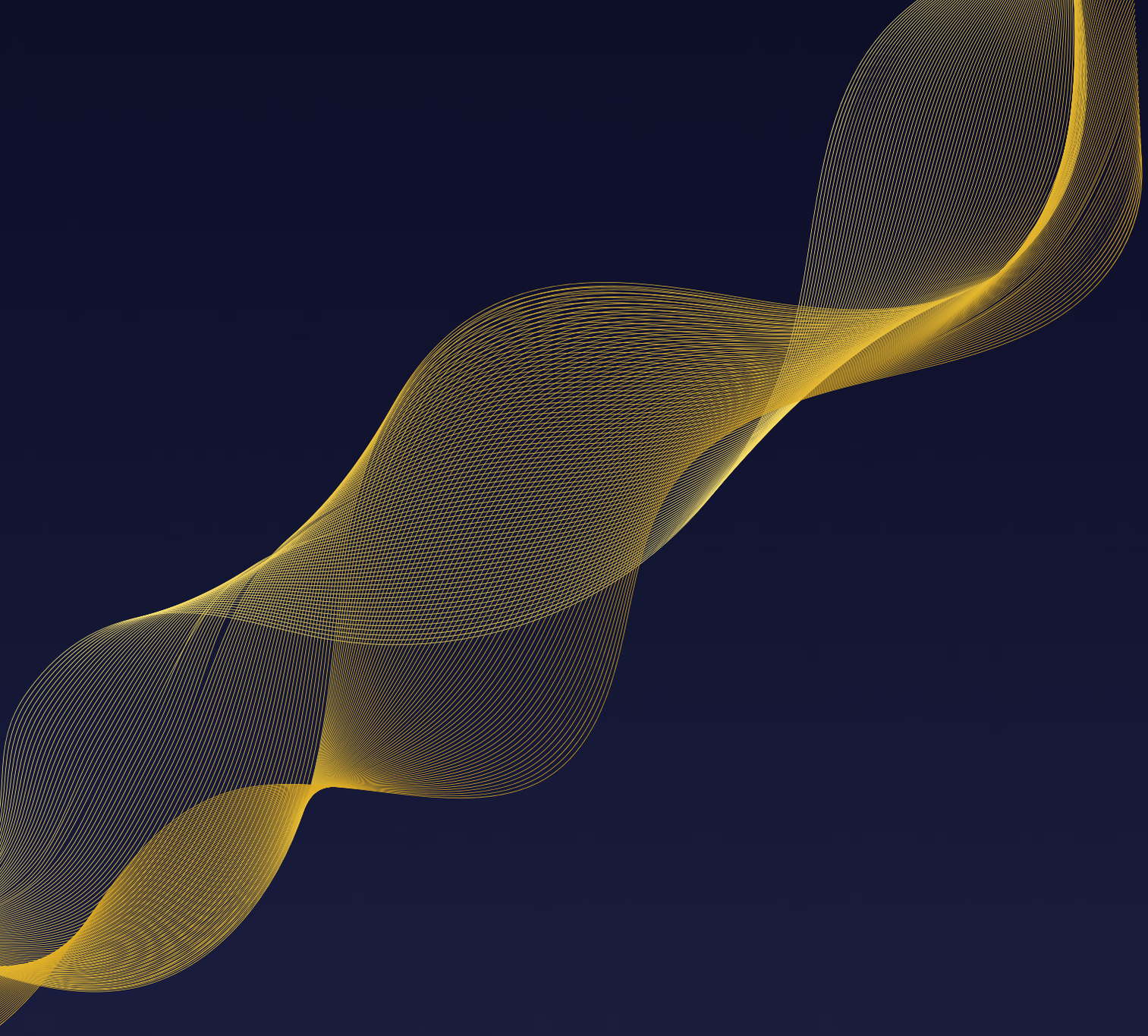
EthOss® Grow Stronger®_

10 Year Anniversary Edition



10 YEAR ANNIVERSARY



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A message from

Dr Peter Fairbairn

Clinical Director, Ethoss Regeneration

10 years ago, EthOss® Bone Graft was born – and what a ride it's been.

Of course, the story of EthOss began long before its CE mark approval and launch in 2015. For me, the journey started in the 1990s when I first began researching and using synthetic biomaterials in clinical practice. Since then, I've performed over 8,000 grafts with these materials and firmly believe they offer the best solution for my patients, setting a new standard of care.

My personal philosophy has always been "the body wants to heal, let's work with it". As clinicians, our objective should always be to help our patients heal, giving them back the tissues, both hard and soft, that have been lost. This can't be achieved if we are using grafts which will remain in the site long-term to just "bulk out" the area. The bone which supports an implant needs to be healthy, living, remodelling bone which will adapt to the stresses placed upon it.

The published protocol (2015), using a delayed immediate placement and graft approach with loading at 10-12 weeks has been used for the vast majority of my cases. However, newer protocols for immediate placement, or using customised healing abutments, are becoming more routine in my practice today.

These newer protocols allow for enhanced graft stability, resulting in improved hard and soft tissue, and enabling patients to be treated in only one procedure.

This is the simple philosophy at the heart of EthOss, the benefits of which can be seen in the long-term cases presented in this publication. It has been a rewarding process to go back and look at these cases, showing how the bone will continue to improve, remodelling naturally over time to adapt to the load of the implant. Patients around the world have the opportunity to enjoy the benefits of true host bone regeneration.

Alongside this growth, we are also entering a new era of the scientific understanding of bone grafts and the role of the host immune system. Recent publications in the area of osteoimmunology have cast a new light on what is "really happening" when we graft, highlighting the importance of biocompatible materials which can up-regulate the host immune response, reducing pain and inflammation and accelerating healing times. I'm enjoying reading this research and the discussions that have followed.

I can't wait to see what the future has in store for the world of synthetics and EthOss® Bone Graft. For now, I'm excited to share these cases with you.

Yours faithfully

Prof. Dr Peter Fairbairn, BDS

Director of Ethoss Regeneration Ltd. Principle Dental Surgeon. Visiting Professor at the School of Dentistry, University of Detroit Mercy.

Former Director of Education of the Association of Dental Implantology (UK)

10 YEAR ANNIVERSARY


ethOss
MASTER COURSE IN BONE REGENERATION (PHILIPPINES)
GROW STRONGER


GREAT


ethO


ECONOMIC
INNOVATOR
Investec

2010
R&D
Initial research & development begins, looking at improvements to existing BTCP / Calcium Sulphate materials.

2013
Founded
Ethoss Regeneration incorporated.

2017
Exhibition launch
EthOss exhibit at IDS for the first time, expanding into markets across Europe.

(December) 2019
Awards
EthOss wins 'Best SME' in National UK Business awards.

2022
Centre of Excellence
EthOss starts hosting Centre of Excellence events in London.

2024
EdgeX launch
EthOss launches its education platform.

2010–2013
Testing period
Initial clinical testing.

2015
CE Marking
EthOss® Bone Graft gained its CE mark and was able to launch and distribute in the EU.

2019 (May)
Re-brand
EthOss went through a re-brand, launching the 'Grow Stronger' motive.

2020 (March)
More territory
EthOss partnered with a Colombian distributer and started selling in South America.

2021
Queen's Awards
EthOss received the prestigious Queen's Award for Enterprise: International Trade.

2025
Ongoing success
EthOss® Bone Graft is now available in over 75 countries.

01

Lower right second premolar buccal defect

PATIENT BACKGROUND

45 years old male
Non-diabetic
Smoked 5 cigarettes a day

The patient was referred after a cast post crown had fallen out and an x-ray showed a fractured root. After consulting the patient the root was elevated out using luxators. The site was then left to heal for 3 weeks as per the published protocol, then a papilla sparing flap was raised and the site degranulated very well. After the osteotomy, a Dio Biotite H 4.5 by 10mm Implant was placed to the correct level and the jump gaps and the buccal defect were grafted with a dry mix (minimal saline added) of EthOss® Bone Graft.

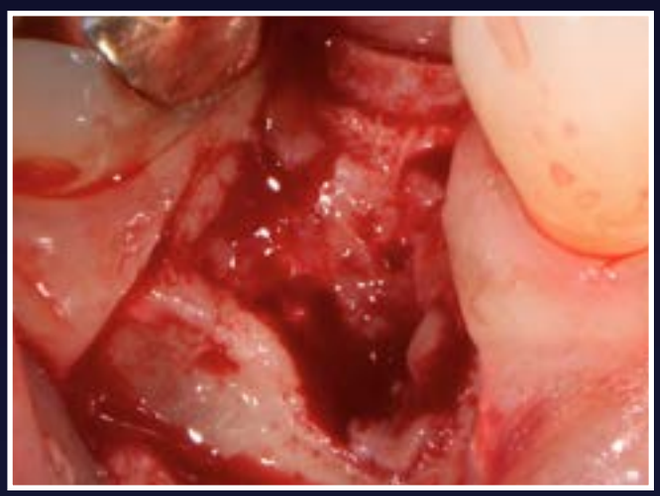
12 weeks later, another small flap was raised showing the new host bone which had regenerated over the implant. Hence we could take a small core sample to access the implant which was sent to Prof. Mangham MBE (University of Manchester, UK) for histologic analysis.

At this stage, an Osstell reading was taken after fitting the correct peg. This reading was 80 ISQ - a very good reading for this type of implant. The case was then restored with a cemented restoration. After over 10 years this restoration fractured and was replaced, allowing for further photos and x-rays. The case was published in both the European Journal for Dental Implantologists (EDI) and Konkret (German).

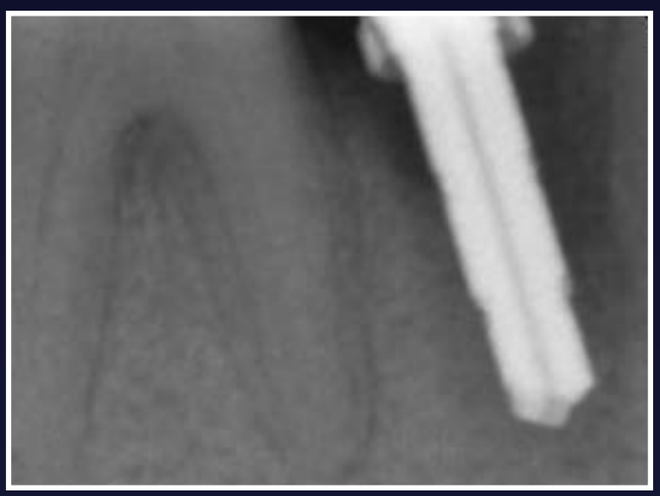
1. Root fracture

2. 3 weeks healing post extraction

Lower right second premolar area buccal defect



3. Flap raised showing defect

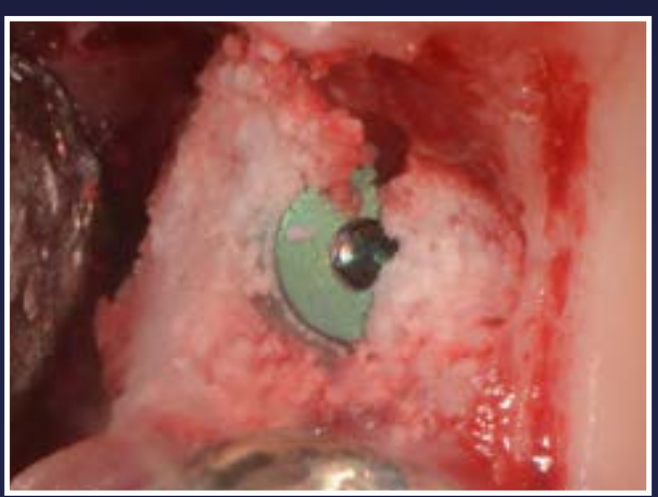


4. Osteotomy

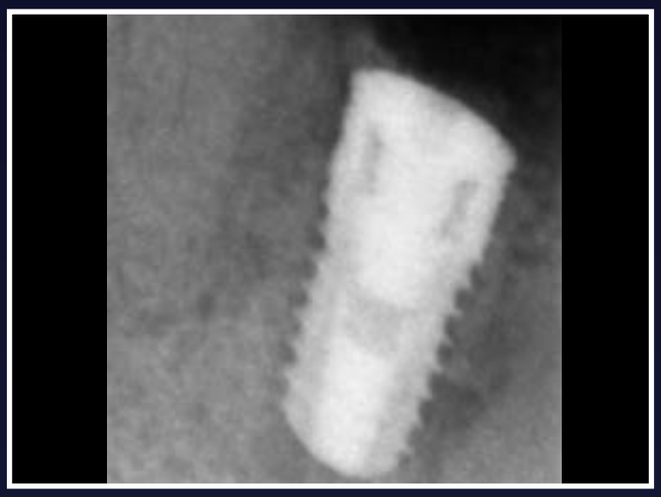
5. Placement of Dio Biotite H

6. Buccal jump gap

7. Site grafted with 0.5cc of EthOss® Bone Graft material



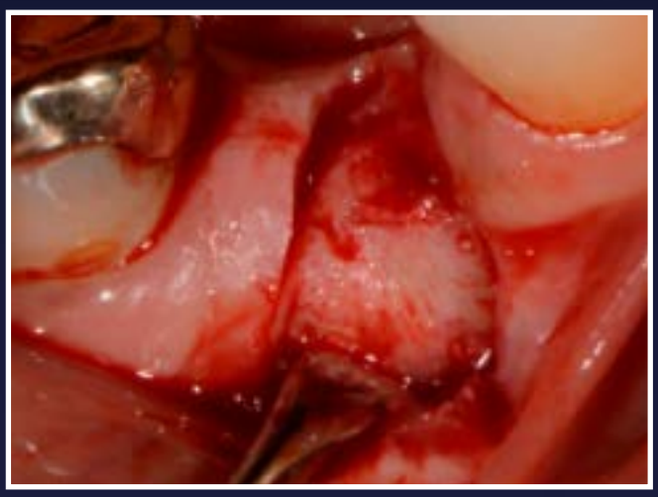
8. Grafted buccal jump gap and over the buccal plate



9. Radiograph of grafted site

10. 12 weeks later, excellent soft tissue healing

11. 12 weeks later, excellent soft tissue healing

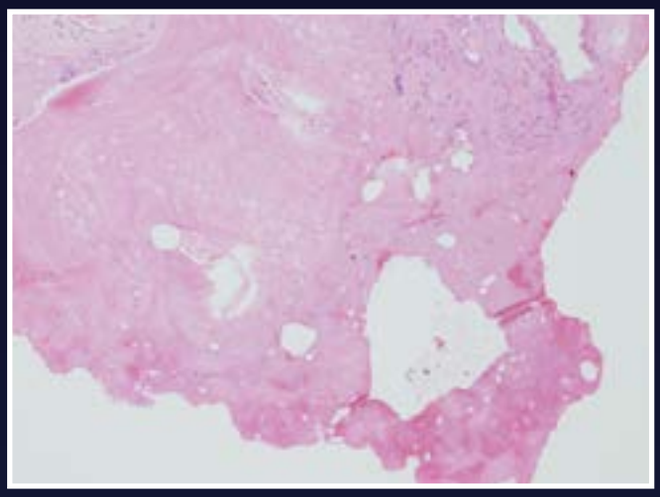


12. Flap raised, new bone regenerated over the implant

13. Radiograph at 12 weeks

14. Core sample taken from directly over the implant. Trephine - sent for histology

15. Core sample



16. Histology H and E stain , Prof C Mangham

[redacted]

MACROSCOPIC DESCRIPTION

Fragment of ? bone measuring 2 x 2 x 2 mm.

MICROSCOPIC DESCRIPTION

Piece of tissue composed of both compact and trabecular woven bone within moderately cellular fibroblastic tissue. Both active fibroplasia and osseous production are underway. Multiple, variably sized "cavities" containing residual refractile granular graft material are present throughout the sample.

Approximately 50% (overall) is induced woven bone. No pre-existing host lamellar bone is present.

No significant inflammatory cell infiltrate is present.

[redacted]

17. Report 50% new host bone

Lower right second premolar area buccal defect

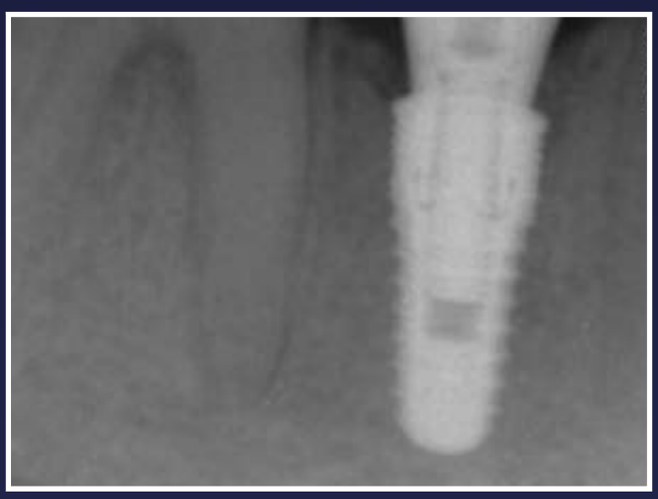
18. Osstell peg placed for implant stability measurement

19. ISQ 80, very good

20. Cemented crown fitted, all ceramic

21. 6 months loaded radiograph

22. Loaded 1 year



23. Loaded 1 year radiograph

24. Over 10 years loaded

25. Radiograph over 10 years loaded

A promising new particulate graft material: a case study

The body wants to heal

The notion of post-extraction bone preservation and early placement of dental implants is not new, having been mentioned in 2003 [1]. Early placement and the use of recently developed synthetic graft materials have yielded enhanced host regeneration [2]. After twelve years and over 2,000 successful grafts using exactly the same protocol in post-extraction bone preservation the authors [4,5] have found consistent benefits when working in harmony with the host's healing process. Others [3] have also successfully used newer alloplasts. The surgical protocol involves a three-week post-extraction soft-tissue healing period followed by delayed immediate implant placement with a simultaneous synthetic (alloplastic) biphasic particulate graft without a traditional membrane.

Case description

Ein vielversprechendes neues Knochenaufbaumaterial: Eine Fallstudie

„Der Körper will heilen"

Ein Beitrag von Dr. P. J. M. Fairbairn[1] und Dr. M. Leventis, Athen

Die Idee des Knochenerhalts nach einer Extraktion in Verbindung mit einer Frühimplantation ist nicht neu – bereits 2003 wurde darüber diskutiert [1]. Die Frühimplantation und die Verwendung von neu entwickelten synthetischen Transplantatmaterialien haben die Regeneration des Wirtsknochens verbessert [2]. Nach zwölf Jahren und mehr als 2000 erfolgreichen Transplantationen nach genau dem gleichen Protokoll zum Knochenerhalt nach der Extraktion konnten die Autoren Rückstellen [4, 5] dass die Rückstellnahme auf den Heilungsprozess im Wirtsgewebe nachhaltige Vorteile bringt. Andere Autoren [3] haben erfolgreich neuere alloplastische Materialien eingesetzt. Das chirurgische Protokoll sieht eine dreiwöchige Weichgewebeheilung nach der Extraktion vor, gefolgt von einer verzögerten Sofortimplantation bei gleichzeitiger Einbringung eines synthetischen (alloplastischen) zweiphasigen partikelförmigen Knochenersatzmaterials ohne traditionelle Membran.

Fallbeschreibung

Case published in the European Journal for Dental Implantologists and Konkret 2015

02

Upper 4 case with Osstell readings

Featured in recent published book by Quintessence “Building Better Bone“

PATIENT BACKGROUND

52 years old, female
Non-diabetic
Social smoker

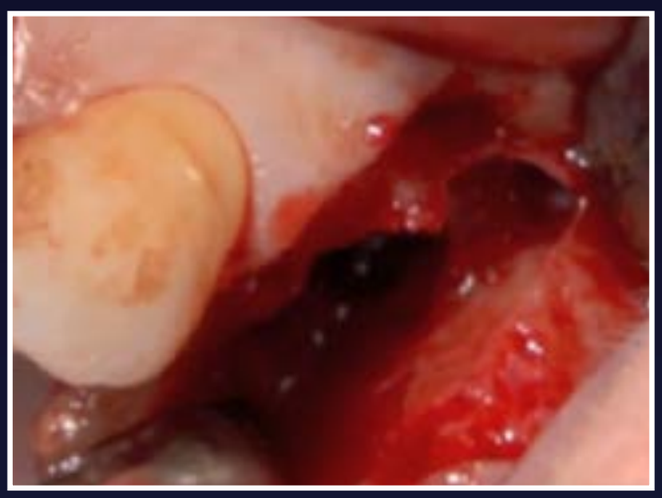
The patient was referred for the removal of a fractured UL 4 by separating the two roots to preserve the bi-furcation bone. After careful lance bur drilling an osteotomy was created in this bone, a Dio Implant 3.5 by 13mm was placed and an Osstell reading was taken (28 ISQ). The site was then grafted with EthOss® Bone Graft and sutured closed with Vicryl.

At 12 weeks the site was re-visited and a new flap was raised, again showing the new host regenerated bone (over 50% new bone as per research). Another Osstell reading was now taken and shown to be 78 – an increase from the initial 28 over the 12 week healing period.

The case has now been loaded over 10 years and shows great long-term stability due to the healthy turnover of hard tissues.

1. Radiograph initial situation

2. 3 weeks post extraction



3. 3 weeks post extraction

4. Radiograph measurement

5. Initial EthOss® Bone Graft placed on palatal aspect

6. ISQ reading at placement

7. ISQ reading at placement

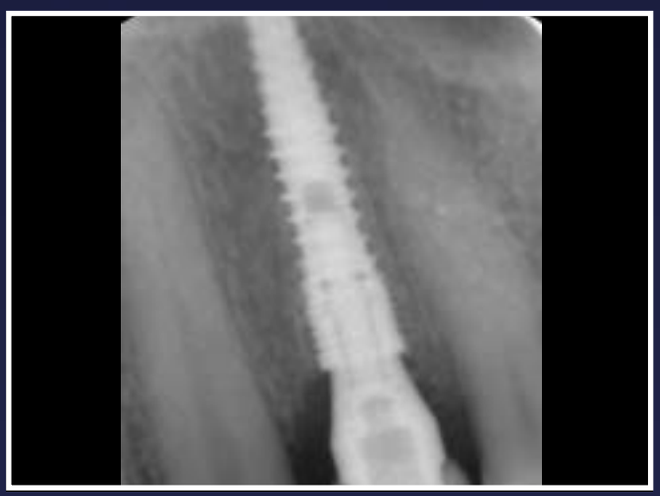
8. Additional EthOss® Bone Graft placed on buccal defect

9. Sutured closed

10. Radiograph of implant and graft placement

11. New host bone at 12 weeks

12. Osstell 78 ISQ



13. Radiograph at loading

14. Loaded 10 weeks

15. 3 months loaded

16. Radiograph of loaded 2 years, improved bone

17. 7 years loaded

18. Radiograph of 7 years loaded

19. Over 10 years loaded

20. Radiograph of over 10 years loaded

03

UL5 case placed with low/no primary stability

PATIENT BACKGROUND

48 years old male
Non-diabetic
Social smoker

The patient presented with a fractured root due to a cast post, which was removed and a 3-week healing period as per protocol was utilised.

A flap was raised and the extent of the buccal bone loss was visible. The site was degranulated and then a Dio SM Biotite H implant placed but very low, possibly zero primary stability was achieved and the site was grafted with EthOss® Bone Graft.

This case has been loaded for over 10 years and is stable.

1. Radiograph of fractured root

2. 3 weeks post extraction

3. Radiograph of osteotomy, low primary

4. Placement of a Dio Implant

5. Grafted with EthOss® Bone Graft material

6. Radiograph of placed and grafted

7. 12 weeks new regenerated host bone

8. Radiograph at 12 weeks

9. Osstell peg placed for implant stability measurement

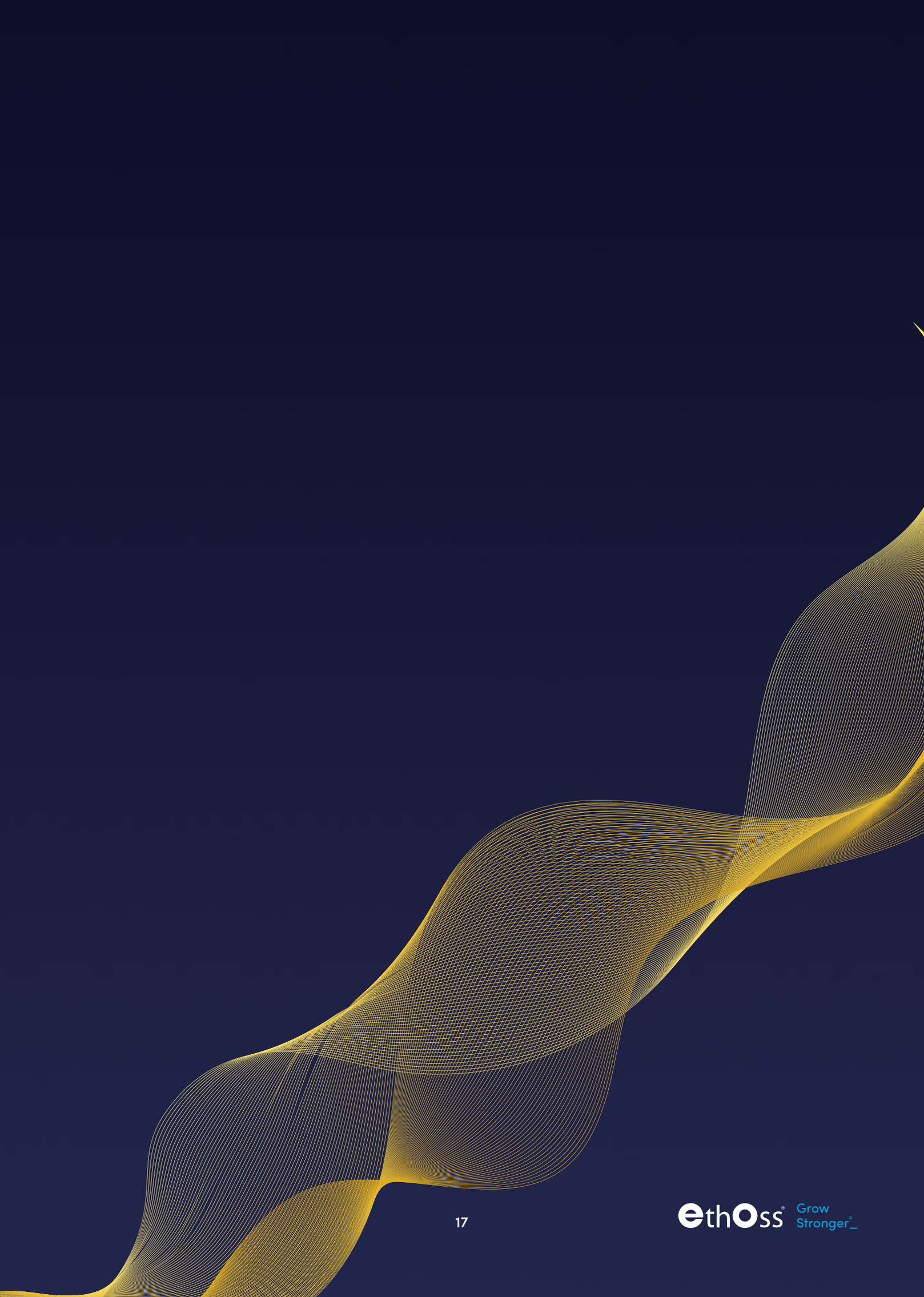
10. Osstell 76 ISQ, good

11. 6 months loaded

12. 18 months loaded

13. Over 10 years loaded

14. Radiograph 10 years loaded



04

Lower left 1st molar, published protocol case

PATIENT BACKGROUND

32 years old female
Non-smoker

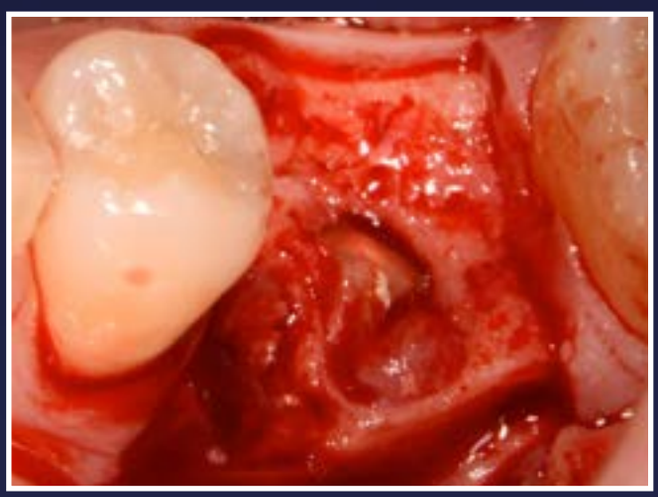
This patient was referred after an extraction of the lower left 1st molar where the referring dentist left the distal root after it fractured off. This can often be more easily removed at the placement appointment 3 weeks later whilst the osteotomy was being prepared, which was the case here.

A Dio UF Implant (4.5mm by 13mm) was then placed at the correct level. The site was then grafted with EthOss® Bone Graft and sutured close with Vicryl.

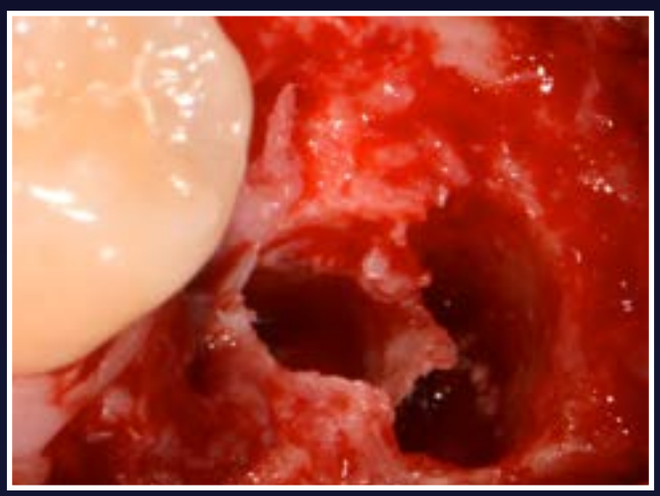
12 weeks later a flap was raised to show the regeneration of new host bone over the site and access to the implant was achieved using a round bur. An Osstell reading was taken which was 76 ISQ. The case was then restored by the referring dentist.

This case has been loaded for over 10 years.

1. 3 week healing



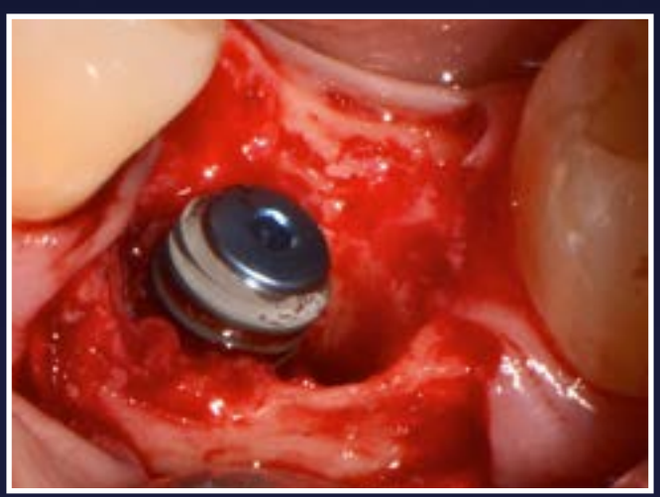
2. Retained root, 3 weeks healing



3. Osteotomy and root removed

4. Placement of a Dio UF implant

5. Radiograph of placement



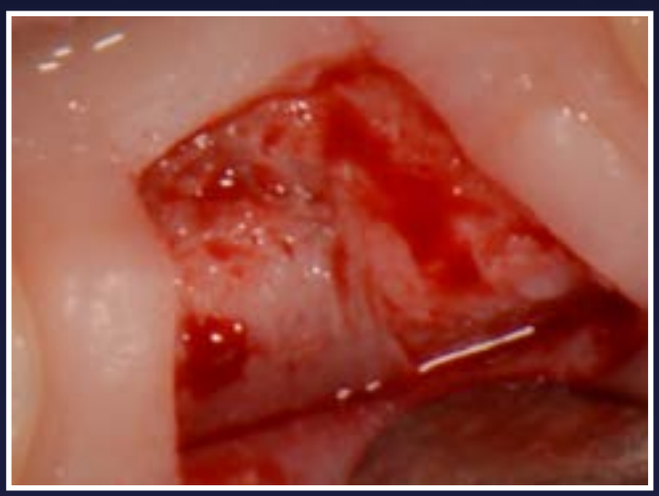
6. Placed to correct level

7. Grafted with EthOss® Bone Graft material

8. Radiograph at placement and graft

9. Flap sutured

10. 12 weeks healed, nice ridge



11. Flap to show new host bone

12. High quality bone as seen in histology

13. Implant uncovered, Osstell reading 76 ISQ

14. Loaded 6 months

15. Radiograph of loaded 6 months

16. 10 year follow up

17. Radiograph of 10 year follow up

05

UR1 protocol case, external resorption

PATIENT BACKGROUND

42 year old male
Non-diabetic
Non-smoker

The patient was referred for removal of the UR1 (UR Central) which demonstrated external resorption. The patient desired implant placement and restoration of the site.

A flap was raised to show a buccal defect which was cleaned with EthOss® Degranulation Burs and a 4.5 mm wide Dio SM implant placed.

The site was grafted with EthOss® Bone Graft material then sutured closed and left to heal for 12 weeks. The new flap showed the new bone and again an Osstell reading showed great integration.

The case has been loaded over 10 years and shows great stability of both hard and soft tissue.

1. Radiograph of external resorption

2. Radiograph of 3 weeks post extraction, note bone loss

3. Defect site, Dio Implant

4. Grafted with EthOss® Bone Graft material

5. Radiograph of EthOss® Bone Graft

6. New host bone at 10 weeks

7. Osstell peg

8. Osstell reading 75 ISQ

9. Radiograph of 12 weeks new host hard material

10. 2 Years

11. Radiograph of 2 Years

12. 8 Years loaded

13. Radiograph of 8 years loaded

14. 10 years loaded

15. Radiograph of over 10 years loaded

06

Aesthetic zone buccal regeneration case

PATIENT BACKGROUND

56 year old female
Non-diabetic
Non-smoker

The patient had worn a partial upper denture for many years and now required an implant solution.

Due to bone modelling post extraction, the ridge was now thin and keratinised soft tissue had been lost - especially in the mid ridge position.

After a flap was raised, two UF Narrow implants were placed and grafted buccally with EthOss® Bone Graft (dry mix with minimal saline) and sutured closed. The case was loaded at 11 weeks.

This case has been loaded over 10 years and tissue stability is great.

1. 3 weeks post extraction

2. Osteotomies prepared

3. First implant placed - note thin buccal plate

4. Second implant placed

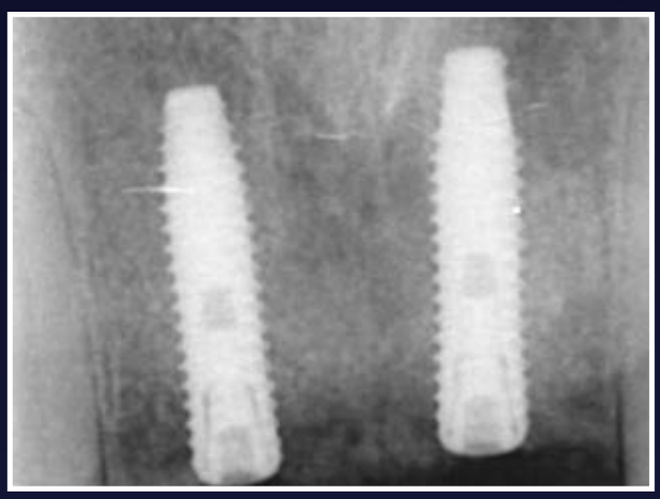
5. Implants in place, grafting needed to increase bone volume

6. EthOss® Bone Graft material placed

7. EthOss® Bone Graft set, ready for closure

8. Suture site closed, any small exposure will heal by secondary intention

Aesthetic zone buccal regeneration case



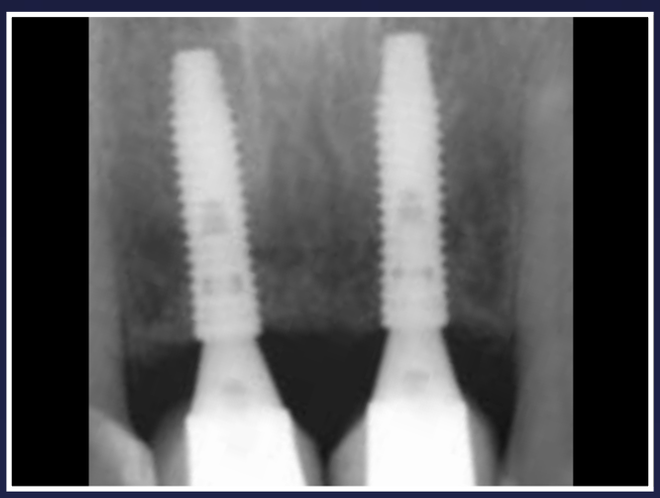
9. Radiograph of placement and graft

10. 1 year loaded

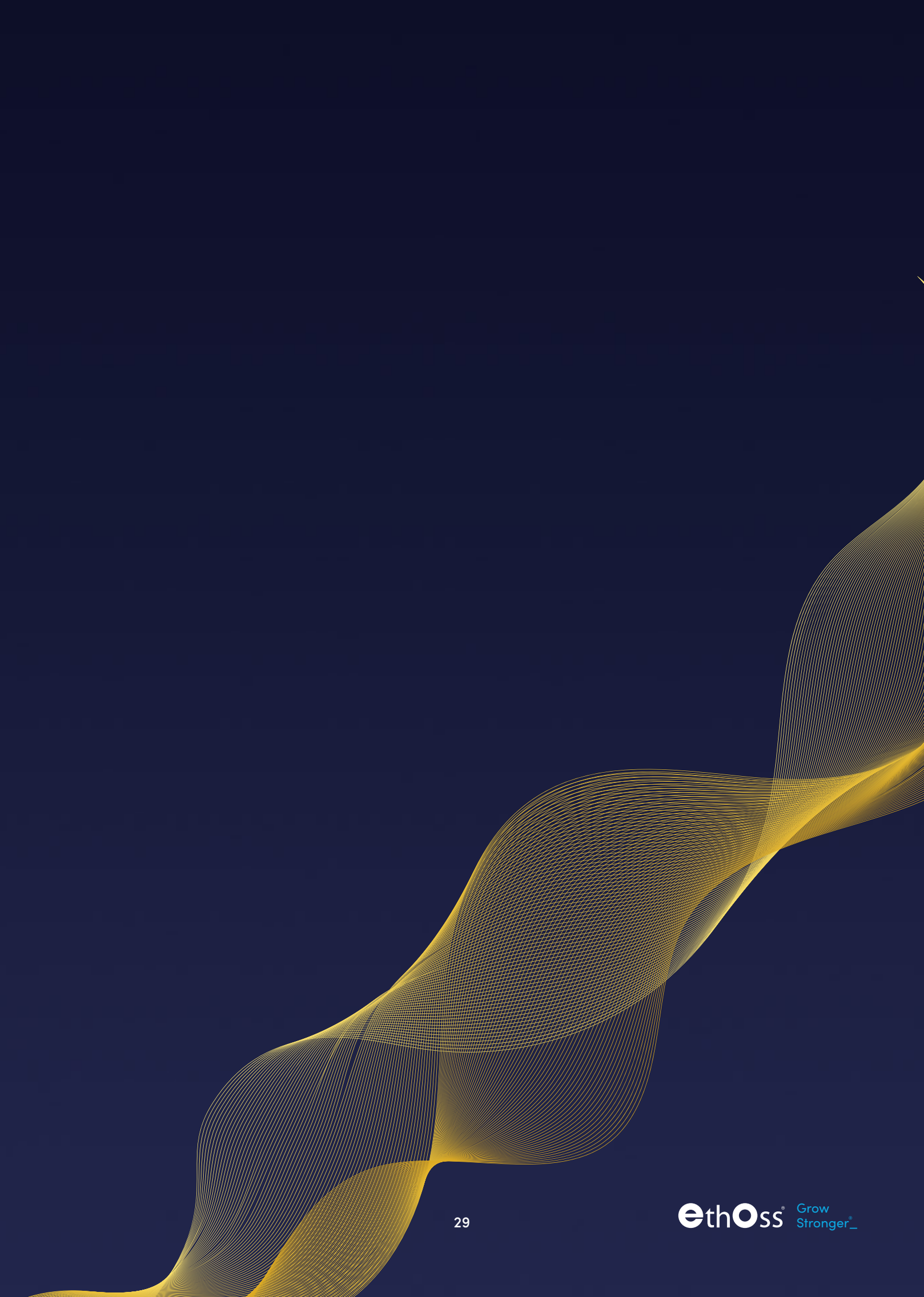
11. 1 year loaded

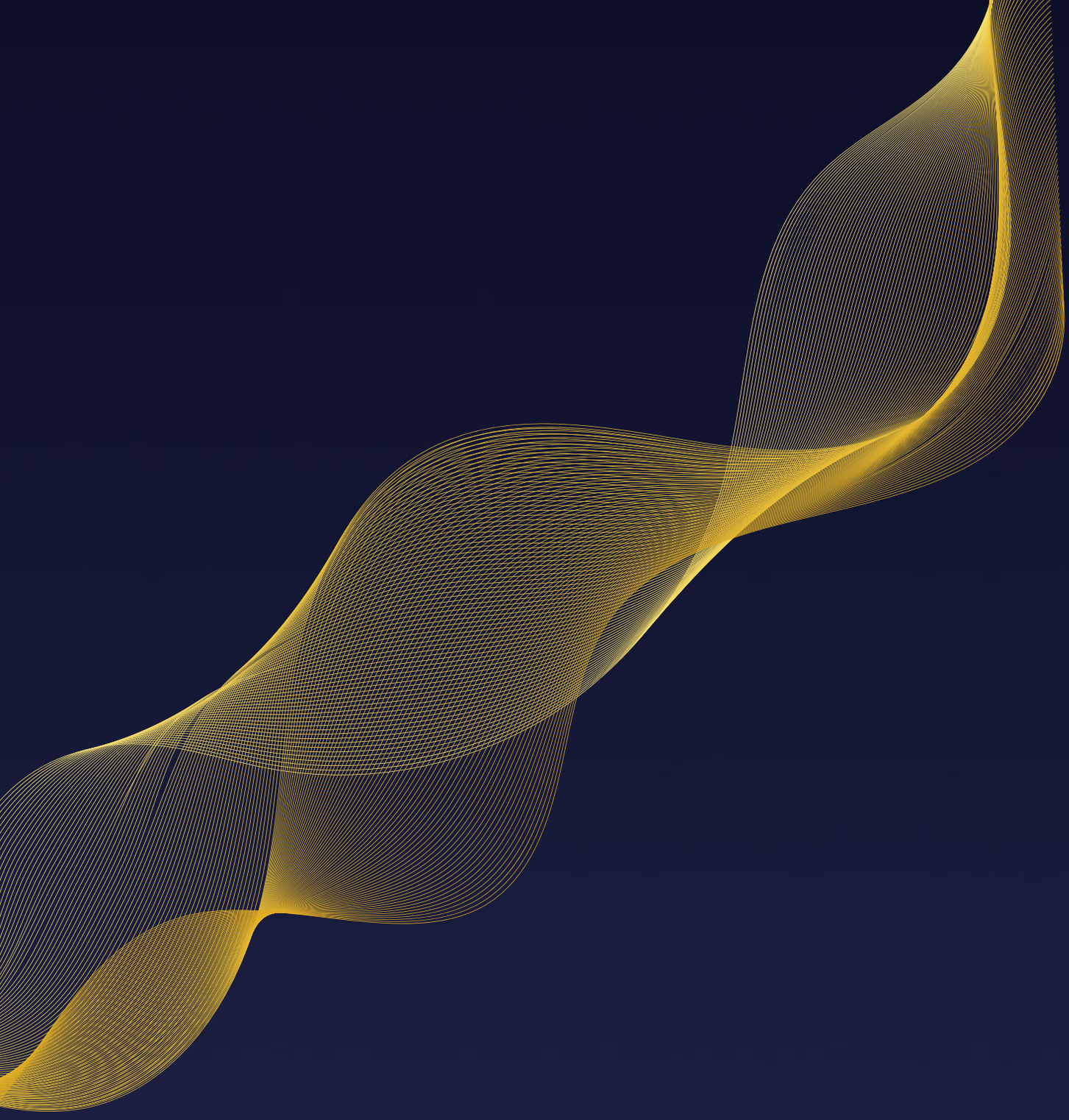
12. 1 year radiograph

13. 10 year loaded



14. 10 year radiograph





If you would like to be involved in the next International EthOss Case Study Book please send your cases to

info@ethoss.dental

For further information on the case studies from this book or to enquire about EthOss® Bone Graft, please contact our team:

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10 YEAR ANNIVERSARY

THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2021

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