Treatment Options for Our Edentulous Patients

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Diagnosis Of Edentulism

Diagnosis (n):
The determination of the nature of a disease.

Edentulism (1998):
The state of being edentulous; without natural teeth.
I GIVE IT SIX MONTHS...
Edentulism

AGE
EDUCATION
DENTURE WEARERS
RACE
SMOKERS
Edentulous arches
Expect mean alveolar ridge height reduction of 0.4mm/year in the edentulous mandible.

The reduction of the mandibular ridge was particularly marked: four times greater than the maxillary arch.

Rate of resorption most rapid during first year of denture wear.

The magnitude and pattern of bone loss show great individual variation.
Clinical, Cephalometric And Densiometric Study Of Reduction Of Residual Ridges.

Atwood D.A., Coy W.A., JPD 1971; 26: 280-295

- Atwood and Coy (1971) corroborated Tallgren’s findings of 4:1 ratio (0.4mm mandible vs. 0.1mm maxilla)
- The reduction of residual ridges (RRR) is a chronic, progressive, irreversible disease, probably of multifactorial origin
- Ultimate goal: prevention or control
Impact Of Edentulism

- Psychosocial
- Nutritional
- Q.O.L.
Edentulous Patients

- Report difficulty in chewing foods that are hard and tough in texture
- Forces them to modify diets in unhealthy ways (↓vegetables, ↓protein, ↑fat)
- Nutritional intake is generally reduced vs. those with natural teeth

Hartsook, E. JPD 1974 32 : 32-40
Demographics

- Large treatment need
- USA 47 million patients wear some type of removable prosthesis
- 58% of these expect their dentures to last 20+ years
- 10% of the USA population struggle with unstable denture
- Neglect to seek treatment
Complete Denture Prosthesis – Literature Review

- Redford et al showed that over 50% of mandibular complete dentures have problems with stability and retention.

- Arch comparisons: mandibular denture treatment produced significantly more problems than maxillary denture treatment.

- A “lack of retention” was the driving force behind this differential.

In 1776 Dentures were State of the Art and ‘gums’ were standard of care
2012-Is this still state of the art?
HOW DO YOU FLOSS BETWEEN YOUR TEETH WHEN YOU'VE ONLY GOT ONE TOOTH?
Edentulism Is A Major Public Health Problem

- It fulfills the World Health Organization (WHO) definition of a physical impairment, because important body parts have been lost.
- It is also a disability, because it limits the ability to perform two essential tasks of life - speaking and eating.
- As a handicap, significant changes are needed in order to compensate for such deficiencies.

World Health Organization. International Classification of Functioning, Disability and Health 2001 Geneva
Satisfied Denture Patients

• QOL for people with this disability is not necessarily poor when they have the ability to cope and adapt
Measuring the Effect of Intra-Oral Implant Rehabilitation on Health-Related Quality Of Life In A Randomized Controlled Clinical Trial


**Hypothesis:**
Will implant overdenture treatment result in a positive quality of life outcome compared with conventional therapy?

**Methodology:**
102 Patients - Randomized clinical trial
- One group (54 patients) mxcd / two-implant OD
- One group (48 patients) conventional mxcd / mncd
Administered the oral health implant profile (OHIP) self-administered instrument designed to measure impact of oral health on psychological well-being and quality of life (Slade and Spencer 1994)

Seven Domains - functional limitation, physical pain, psychological discomfort, physical, psychological and social disability, and handicap

Pre-treatment and at 2 months post-treatment
Results

• Significant differences observed between the two groups on all seven domains of the OHIP

Conclusion

• Ratings of quality of life are significantly higher for patients who receive two-implant overdentures (opposing mxcd) than for those with new conventional dentures
Conclusion

Preliminary evidence suggest that providing edentulous people with one of the least complicated forms of implant prosthesis (two-implant OD) will:

- Modify Diets
- Improve their nutritional state
- Strong impact on general health!
The McGill Consensus Statement

Guidelines for clinicians and patients

Stimulate discussions within and between professional organizations, health authorities and third party payers

Result – recommend a change in health care policy that will impact how these services are delivered in the U.S. and worldwide!
The McGill Consensus Statement On Overdentures

As a minimal treatment objective:
Mandibular two implant overdentures
as first-choice standard-of-care for edentulous patients.

JOMI Vol.17, No.4 2002
Int. J. of Prosth. Vol. 15, July/August 2002
Locator Attachment

Inside retention

Outside retention
LOCATOR® Abutment Female Inserts

**White**: (Strong): 5lbs = aprox. **2250 g**
**Pink**: Light Retention: 3lbs= aprox. **1350 g**
**Blue**: Extra Light Retention: 1.5lbs = aprox. **680 g**

**Green**: For use with non-parallel implants up to 40° divergence. (20 ° per implant) Retention 4lbs = aprox. **1800g** (to approx. 2700 dependent on angle)

**Black**: Designed for processing and it will maintain the overdenture in position while acrylic sets around the female housing.
Timing

- Implant placement
- **Uncover implants**
- Construct overdenture.
- Impressions
- Registration
- Try-in
- Pick-up attachments in denture
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Classical Approach for Fixed Implant Rehabilitation
Is fixed the best option?

- Minimum bone/soft tissue loss... no problem. This allows teeth to emerge from soft tissue.

- Where we have advanced resorption/bone loss the teeth can look long!! We may therefore need to disguise soft tissue loss with pink porcelain/acrylic... HYBRID RESTORATION.

- Lip support and hygiene needs to be considered before committing to this type of treatment.

- Speech

- Implant supported over-denture?
65-year-old retired teacher

Really unhappy with spacing and smile

Good implant sites UR5-UL4

Poor lower arch bone quantity

Sacrifice poor abutment teeth for fixtures

Rehab upper arch with fixed hybrid, lower with RPD
Not leaving things too late!

- 72 year old retired medical consultant
- Years of ‘not looking after his teeth’
- Severe periodontal condition with hopeless prognosis of many of the teeth
- Patient keen on ‘avoiding denture’
- Provisional Phase; maintaining 2 teeth in the lower to help with adaptation to wearing /-p
- Healing period of 6 months
- Implant placement in U+L
• Father P.J.

• 74 year old retired priest

• Been unhappy with his teeth for years

• Doesn’t like the way his lower teeth ‘come out’

• Class 3 malocclusion

• Few teeth remain in the upper

• Limited budget
Limited Bone levels / Large soft tissue defect
• Spring pin which snaps exactly into a conical female
• Once the spring pin "clicks" into the female, the patient knows that the prosthesis is properly seated.
• Internally held within over-denture
• Spring pins can be replaced as required
Bone levels that require grafting
All-on-4
All-on-4 .. when is it possible?

[Image of dental x-ray with annotations: 10 mm Height, 5 mm Width]
• Provides edentulous patients with a fast cost effective fixed restoration

• Uses only 4 implants to support a full arch fixed prosthesis.

• 2 of these implants are tilted distally
All-on-4™

- Avoid bone graft
- High success rates
- Return to full function
- Highly maintainable
- Possible to do immediate function
- Cost effective
- Standardized surgical/restorative protocol
Conclusions

- Being edentulous for most people is a handicap to everyday life
- 2 implant lower over-denture is a minimum we should be offering our patients if at all possible
- Fixed restorations are fantastic solutions to an edentulous arch but we need to be careful with speech / hygiene especially in the upper arch
Many Thanks
What is All-on-4™

- Only 4 implants per arch
- Avoiding implants in posterior sites
- Can be a flapped / flapless approach
- Use of cantilever if required
- Immediate loading protocol available
- Low cost immediate restoration